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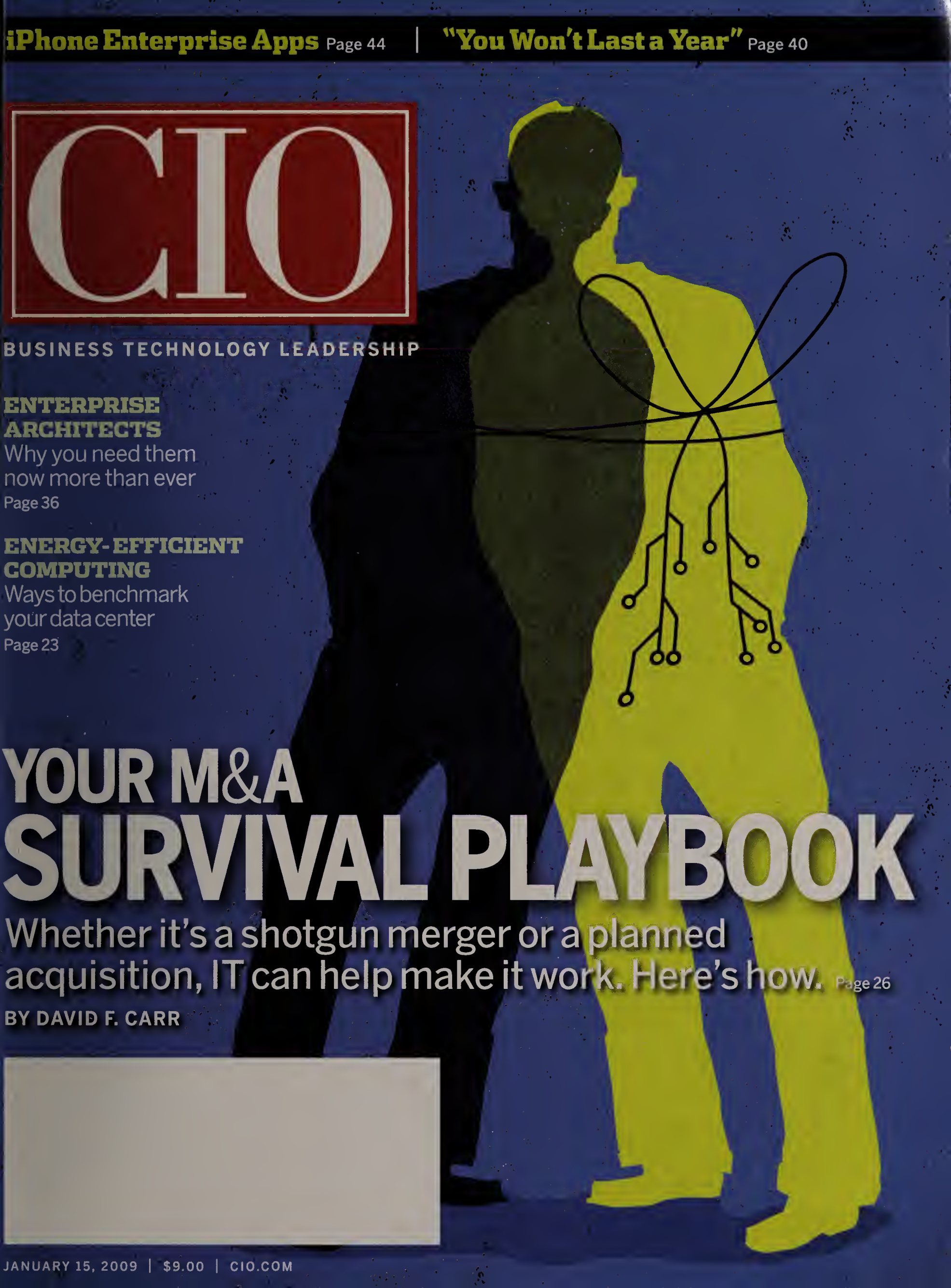

CIO

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YOUR M&A SURVIVAL PLAYBOOK

Whether it's a shotgun merger or a planned acquisition, IT can help make it work. Here's how. Page 26

BY DAVID F. CARR

JANUARY 15, 2009 | $9.00 | CIO.COM

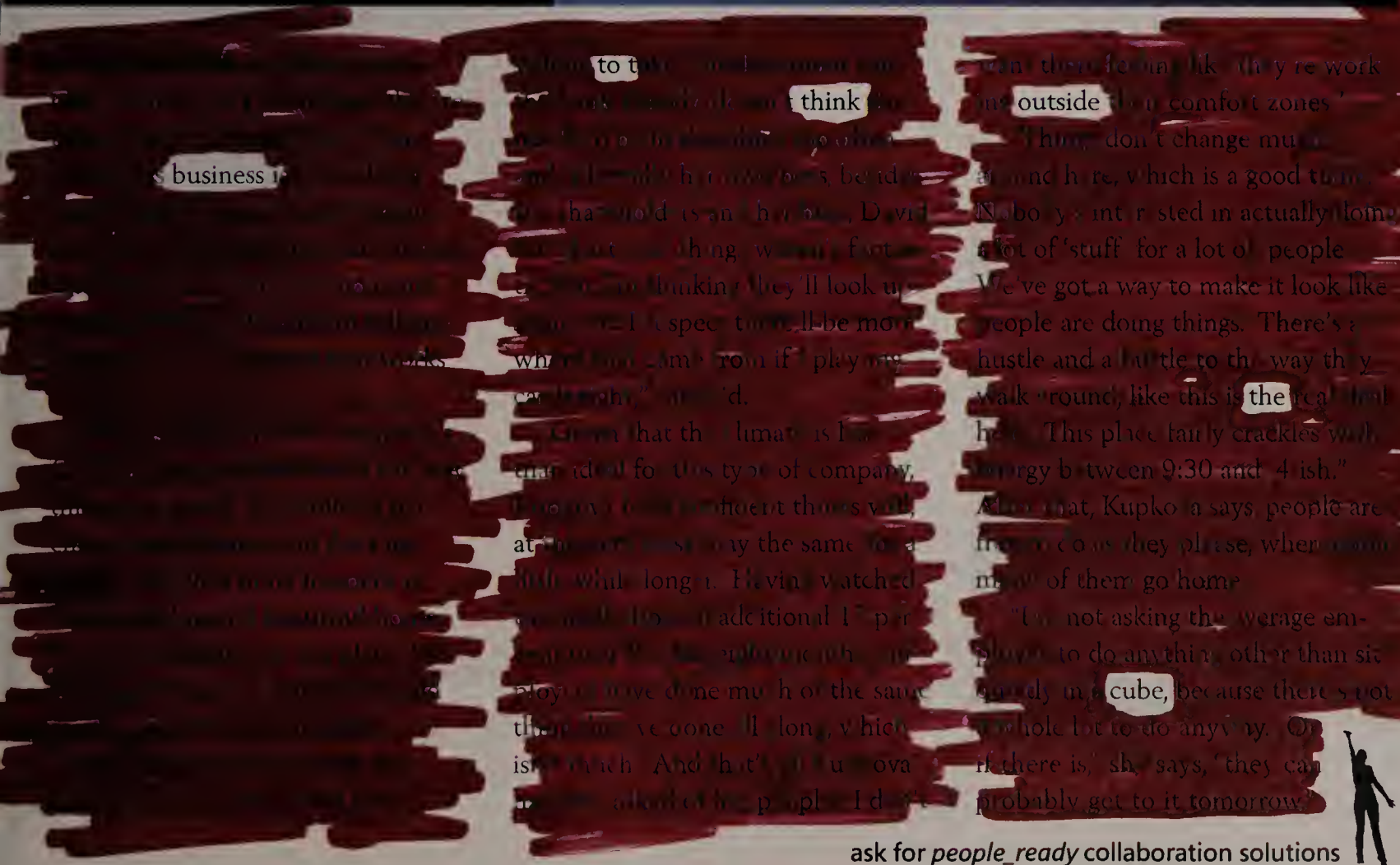

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PHOTO BY TATIANA POPOVA

Glimmers of Hope

CIOs find opportunities to shine in stormy economy

I've been on a quest for silver linings lately, for some shimmering upside in the stormy downside of this economy.

So I've been asking all the CIOs I talk with about their business outlook (hunkered down), IT spending plans (locked down) and overall expectations for 2009 (whittled down). CIOs across the country are reprioritizing business projects, tightening up on short-term cost reductions and looking for ways to optimize IT spending.

"None of us has experience with this kind of economy," the IT chief of a global consumer goods company told me. "How can we have zero overhead growth while still maximizing value? The demands on IT aren't going away."

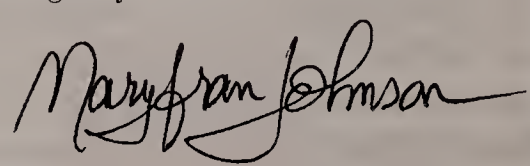
One CIO in the home building market summed up his world in this way: "The first six months of 2009 will be about survival and building up cash to meet our obligations. It's about lifting up all the rocks and pebbles—deferring or cutting or just holding on."

Yet both of these execs had encouraging news about that silver lining. They see this downturn having a cleansing effect on project backlogs and muddled business processes—a chance to "catch up, clean up and smarten up" in all the places where inefficiencies crept in. Like so many of you today, they also see competitive opportunities as business models shift, market rivals weaken and M&As take place.

For example, IT can make a huge difference in the success of a merger or acquisition. Our cover story, "Your M&A Survival Playbook," offers valuable front-line experience from CIOs who've worked through multiple mergers and know how to prepare an IT organization for sudden M&A activity. You may be surprised to learn that the pressures of a "shotgun" merger—with its emphasis on integrating technology and teams of people as fast as possible—can work in IT's favor.

One critical piece of advice in our merger story centers on the people aspects of managing through a momentous change. That felt particularly relevant here at *CIO* as we managed through the departure of our longtime friend and colleague, Editor in Chief Abbie Lundberg.

Stepping into Abbie's job is a daunting but wonderful honor. For an IT journalist who thinks CIOs are the most interesting people on the planet, there's no greater place to be than this magazine. So don't be strangers! Drop me a line anytime with suggestions, story ideas or a few silver linings of your own.



Maryfran Johnson, Editor in Chief, *CIO* Magazine & Events
mfjohnson@cxo.com

PHOTO BY LYNNE DAMIANOS

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The Power of Youth

How to put Web-smart teens and their skills to work

In several days, Barack Obama will be sworn in as the 44th president of the United States. Paraphrasing a decades-old quote from the late New York Sen. Daniel Patrick Moynihan, our nation is "young again."

Here's an idea for how you can leverage the power of youth to accelerate the economy in 2009 and beyond. The idea is called Student Web Corps. I created it thanks to squirrels in the attic of my Cape Cod, Mass., home.

The squirrels drove me to the exterminator section of the local Yellow Pages. Of the scores of firms listed, only three had e-commerce sites, and I eventually did business with one of them.

It got me thinking: How many small businesses in America have websites? Here are the staggering stats:

According to the U.S. Small Business Administration, 90 percent of the nearly six million businesses in America had fewer than 20 employees in 2005 (the last year for which data is available). Netflare, A U.K.-based Internet design and marketing company, finds that 92 percent of company websites in Britain lack an e-commerce component, and only 23 percent have updated their site since its launch. There's no reason to think U.S. companies are much different—that is, behind the times online.

Now consider our nation's Web-proficient youth. Student Web Corps is a new program run by Tech Corps, which is the organization I founded to recruit IT professionals to donate their time to schools. Student Web Corps aims to recruit thousands of teenagers from middle and high schools across the country and match them with owners of very small businesses in their local communities. Collaborative teams of tech-smart—and artistically talented—youth will aim to build initial websites for firms that have none. And refresh the aging ones.

I have talked about the Student Web Corps program in speeches across the nation to a sea of nodding heads. Now, it's your turn to vote.

If you like the idea, send me a note expressing your thoughts and interest in getting a chapter launched in your hometown. Let the CIO community jump start the next generation of IT leaders by getting them involved in Student Web Corps.

I look forward to hearing from thousands of you. Write today.

Gary J. Beach

Gary Beach, Publisher Emeritus
gbeach@cio.com

PHOTO BY WEBB CHAPPELL

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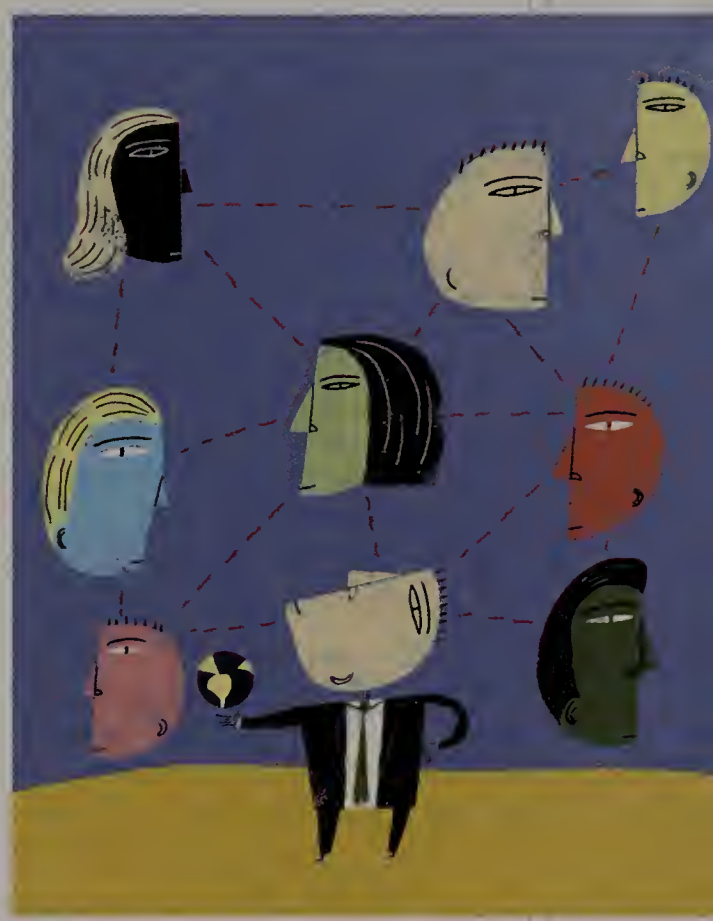
The Outlook for Outsourcing



SERVICES All things considered, 2008 was a relatively stable year for the IT services industry.

Deals got smaller and shorter, but they grew in number. The second-tier providers and Indian vendors did well, along with Accenture and IBM Global Services.

IT outsourcing providers were largely unscathed by the economic downturn throughout much of the year. "It took almost two quarters for the effects of the slowdown to manifest in providers' financial statements," says Eugene Kublanov, CEO of outsourcing advisory NeoIT.

By the end of 2008, however, CIOs became too distracted by the economic destruction to do any outsourcing deals. "As the markets crumbled and CIOs were confronted with the prospects of their personal employment, naturally, decision making around strategic cost cutting and efficiency took a back seat," says Kublanov.

That's all poised to change in 2009.

"Whenever there's a downturn, people outsource more, not less," says Gartner analyst Linda Cohen. "Organizations want to take costs out wherever they can. CFOs are pounding on their CIOs to just outsource it, just offshore it."

"The difficult economic conditions will push *Continued on Page 12*

Groups Push Obama for Net Neutrality

INTERNET Advocates of Net neutrality rules in the U.S. have called on President-elect Barack Obama to act quickly to prevent broadband providers from blocking or impairing customer access to Internet content.

The Open Internet Coalition has asked Obama to follow through on promises made during the presidential campaign to establish Net neutrality rules. The coalition also called on Obama to appoint a new chairman of the Federal Communications Commission (FCC) who would enforce Net neutrality rules and champion broadband competition.

The group says Obama should also appoint leaders at the Federal Trade Commission and Department of Justice who will promote an open Internet through antitrust and consumer-protection laws, and put key staff in place at the new office of the U.S. chief technology officer and the Office of the U.S. Trade Representative to promote open Internet ideals both at home and abroad.

When asked if they believe that Obama will act on Net neutrality and broadband competition given priorities such as the U.S. economy, coalition members say they expect the new president to move ahead on tech issues. "Providing affordable, accessible, high-speed Internet to all Americans is part of the economic recovery," says Markham Erickson, director of the coalition.

Large broadband providers have questioned the need for new Net neutrality laws, saying that the FCC has already acted against carriers that have unreasonably blocked or slowed Internet content. Strict Net neutrality rules may discourage investment in broadband networks at a time when Obama is calling for more broadband, they have said. *–Grant Gross*

ILLUSTRATION BY VEER/JAMES YANG

Squeezing Vendors Yields Little Value

COST CUTTING IT vendors may be growing desperate amid the global economic downturn, but CIOs must employ a range of tactics—not just bullying—to extract cost savings from them. That was the message of a teleconference on improving vendor relationships held by Forrester Research last month. IT leaders can't use a shotgun-style approach and expect success, says software licensing analyst Duncan Jones. "Anything that is undifferentiated, like a general letter that goes out [to vendors] saying we've got to cut everyone's maintenance by 10 percent? That's not going anywhere," he says.

If a customer does succeed in lowering its services costs, "the vendor is going to immediately substitute junior people," says analyst John McCarthy, whose coverage includes offshoring.

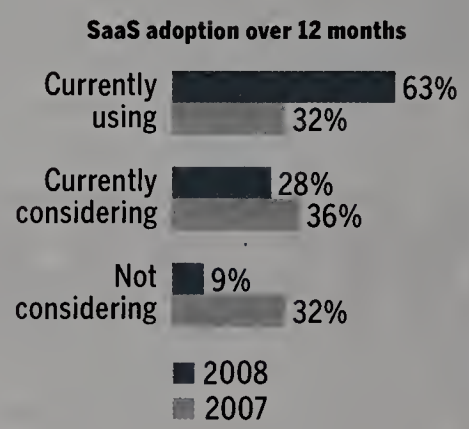
Tactics are different for software licenses and maintenance agreements. "You're dealing with a software rep who has different goals than you. He needs to sell new licenses and has no interest in helping you cut costs," says Jones. "But if you get up higher in the organization, there may be people who care more about the long-term relationship, and there's flexibility there."

Customers could also use money earmarked for new software as leverage, he says. "Anything you're trying to get, like cutting maintenance on products you're not using, you might get that as a quid pro quo for spending in another area."

CIOs could also get more value from outsourcing through strategic hiring, says analyst Paul Roehrig, who focuses on outsourcing and IT services. "I would get someone who really knows how to manage a service provider. Some of the best outsourcing deals have really good people who know how to get a service provider to do what you want." *–Chris Kanaracus*

SaaS Adoption Rates Surge

APPLICATIONS SaaS is sizzling. Adoption rates for software-as-a-service solutions nearly doubled during the last 12 months, according to a recent Cutter Consortium survey. Survey respondents cited the need to eliminate additional infrastructure and staff costs in the current downturn as their primary objective for turning to SaaS.



Source: Cutter Consortium

Outsourcing

Continued from Page 11

companies further than before to consider what stays in house and what gets done by others," agrees Kublanov. "Additionally, demands by the business for further cost reduction will need to be addressed in an environment where many companies have already leveraged labor arbitrage to source the low-hanging fruit."

CIOs may sign hasty deals for short-term returns. In a case of what Cohen calls "convenient amnesia," IT leaders may forget all the lessons they learned, rushing into bad outsourcing arrangements and chasing elusive benefits. "Everyone has a gun to their head right now," she says. "But the financial voodoo of outsourcing deals doesn't work. You have to accept the reality that if you hand your mess over to a vendor, you're going to eventually have to pay for that burden they take off your plate."

Bad deals can lead to degradation in service performance and price increases down the line. Smart buyers will ask for shorter term lengths, but in times of economic pressure, rational thinking is hard to come by.

And remember all that talk about how an IT services provider could be your partner in innovation? Forget about it.

"The focus will shift away from open-ended efforts," says Stan Lepeak, research director of outsourcing consultancy EquaTerra. "Buyers will not have much appetite for transformation in 2009."

Although outsourced innovation will be set aside in 2009, the greening of IT outsourcing deals will not, if only because sustainability can mean cost savings. "Purely environmental desires will take a back seat to explicit cost savings desires," says Lepeak. "But green that hits the bottom line will flourish." *–Stephanie Overby*

PHOTO BY ISTOCKPHOTO.COM

Can You Read Me Now?

COMMUNICATIONS Road warriors know that listening to an urgent voice mail message can be impossible when you're in a noisy airport or hotel lobby and there isn't a quiet place to escape to.

Now they can read those voice mails on their mobile device or laptop with the help of a new system from Avaya. The system lets users convert spoken voice mail messages into text, use that text in a message in any e-mail system and then optionally send the voice mail itself as an attached audio file.

The system gives both callers and recipients new options for retrieving and saving their communications. It also means that voice mail, in the form of text, can be stored, searched and read just like any other kind of business communication. That can help companies comply with disclosure laws, the company says.

Avaya's Speech to Text system uses the SpinVox Speech to Text messaging service and the EVM1 (Enabled VoiceMail) gateway software from Mutare. It works with the Avaya Modular Messaging voice and fax platform.

The system is aimed primarily at helping mobile users keep in touch and can work with any connected mobile device, according to the company. It can handle English, French, German and Spanish messages.

Avaya is one of the largest purveyors of unified communications (UC). UC is a set of technologies designed to let people manage their communications as they like and be contacted in the best possible way given where they are and what devices they have on hand.

But the concept, which is built around making everything into packets on a single IP (Internet Protocol) network, also opens up new possibilities for merged forms of communication.

–Stephen Lawson

Nationwide Uses Unified Desktops to Boost Customer Satisfaction

SOFTWARE What's one way to keep customers happy? Making your employees' lives easier. Nationwide Insurance's IT department did just that by streamlining the applications that a customer service representative (CSR) uses to handle calls. Now a unified desktop solution links disparate applications to give reps a single view of a customer's information.

Since implementing the new system, Nationwide has decreased call time by up to 20 percent, and a CSR can take up to 10 extra calls per day.

Srinivas Koushik, CIO for Nationwide's Property and Casualty Division, began thinking about how IT could improve service after visiting the company's call centers. He noticed that IT hadn't provided a single tool to make work easier for the CSRs. Before unification, billing, claims and administrative data were housed in different programs that loaded separately, which lengthened call time and led to customers being put on hold.

The WorkSpace solution from Jacada is a browser-based interface with tabs for billing, claims, logistics and sales. CSRs can quickly see customer information so they can make informed decisions about handling a call.

"The new system puts all the information together in one place," says Koushik. The CSRs also have to master fewer programs, which shortens training time. Koushik and his team have rolled out the solution to two of the company's four call centers.

Nationwide created a kind of dashboard for the CSR, says Bob Hafner, managing VP of communications applications for Gartner. This trend is gaining traction as information mash-ups are becoming common and the tendency is to "bring dissimilar but necessary applications together for the individual to do their job."

–Jarina D'Auria

ILLUSTRATION BY ISTOCKPHOTO.COM

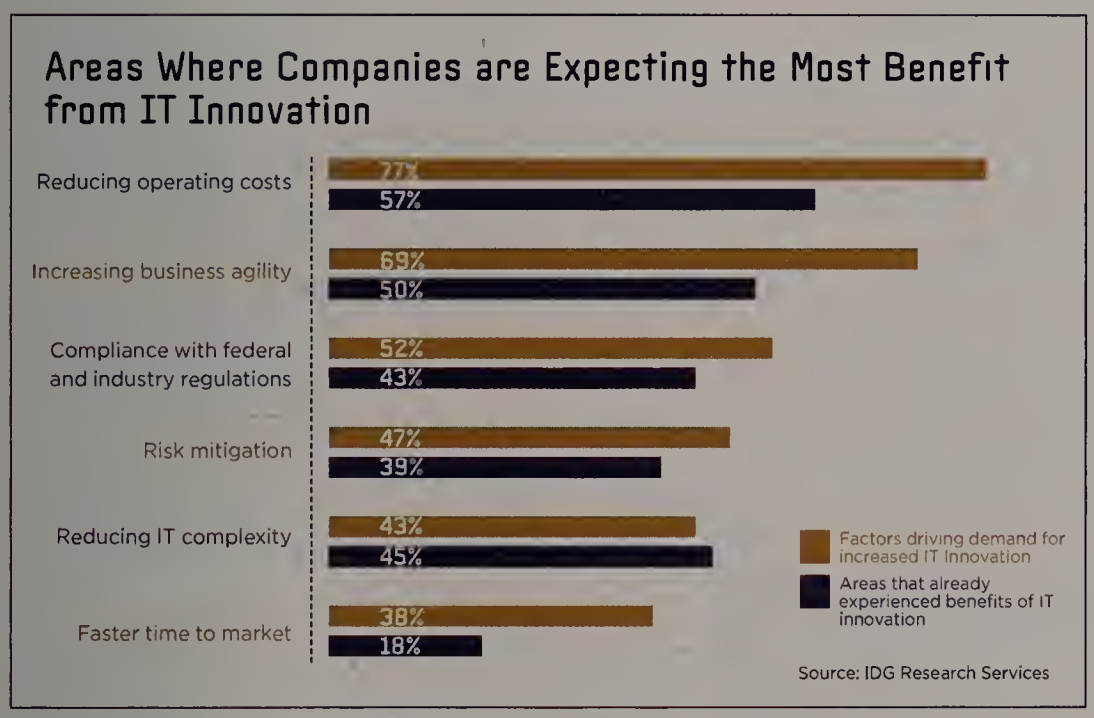
The Importance of Fostering Innovation, Even in Today's Tough Economic Climate

Research shows that, by focusing on innovation, organizations are reaping tangible business benefits.

Given today's rough economic climate, CIOs have an even tougher job, full of risk and competing requirements. They must balance the need to reduce skyrocketing operating costs and complexity while helping the business side of the organization become more agile and competitive.

Being able to swiftly respond to real-time business needs and rapidly shifting market conditions is a tall order, and one that beleaguered CIOs grapple with every day. They may also question whether innovative technologies and strategies are worth the investment. But as the economic meltdown continues, placing unprecedented pressure on businesses to be creative and to reduce costs, the question should be: "Can we afford not to?"

In order to gauge how far along the path to innovation and agility today's CIOs have traveled, IDG Research Services surveyed 188 IT leaders on several key issues.



These included the role of innovation and the perception of IT within the enterprise, and the most important factors driving the demand for increased IT agility.

The results of the survey show that CIOs believe their main role is to align the IT and business sides of their organizations toward a shared vision of growth. They also reveal that focusing on innovation, while challenging, yields tangible benefits—including a reduction in operation costs and an increase in business agility.

Creating an IT infrastructure that can dynamically respond to real-time business demands is a goal Unisys shares with CIOs. The Unisys Real-Time Infrastructure (RTI) strategy lays out a clear plan for transforming IT from a decentralized, costly and resource-heavy operation into a more centralized, simplified and cost-effective one, through technologies such as virtualization and automation.

Successful CIOs who are focused on innovation are more likely to invest in server virtualization and process automation, as well as IT governance, compliance initiatives and storage virtualization. The CIOs surveyed cited open communication within IT, encouragement and leadership of senior IT management, and working in a collaborative environment as critical to achieving alignment with the business. And one of the key steps CIOs need to take for success is to choose vendor partners who share a belief in implementing an IT infrastructure that can respond to business requirements and changes in real time.

Unisys is one such vendor. Unisys helps enterprises to become more holistic, real-time organizations through its 3D Blueprinting™ approach and its RTI solutions-focused framework. The 3D Blueprinting approach integrates four key dimensions of business-IT alignment: strategy; process; applications; and infrastructure. Using these precepts, Unisys helps companies determine ways to ensure that innovation will have the greatest benefit to the business.

For CIOs seeking to reduce cost and complexity while fostering business agility and innovation, Unisys is a valuable partner.

Go to www.cio.com/whitepapers/Unisys to obtain a free download of the complete IDG survey results.

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Report: Feds Should Regulate Cybersecurity

SECURITY The U.S. government should overhaul its approach to cybersecurity, with sweeping new regulations on private businesses and a new, centralized cybersecurity office in the White House.

The White House office is needed because the Department of Homeland Security is not equipped to protect the government against cyberattacks, according to a report from the Center for Strategic and International Studies' Commission on Cybersecurity for the 44th Presidency.

The report also calls for new government regulations focused on protecting U.S. networks. Most would focus on refining government efforts to protect its own cyberinfrastructure, but regulations on private industry are also needed.

The report rejected the market-driven approach to cybersecurity advanced by President George Bush. "The strategy essentially abandoned cyberdefense to ad hoc market forces," the report said. "We believe that cyberspace cannot be secured without regulation."

DHS, the lead agency focused on cybersecurity, can be strengthened, the report said. It should retain responsibility for the U.S. Computer Emergency Readiness Team and related functions, but a new White House National Office of Cyberspace would coordinate and oversee the nation's cybersecurity efforts.

The report also recommends the creation of a new national cybersecurity strategy that includes diplomacy, military action, changes in policy and the involvement of intelligence and law enforcement officials.

–Grant Gross

Put Your Money Where the Business Wants It

I.T. SPENDING IT leaders were told to "do more with less" even before the recession. Savvy managers like Krischa Winright, associate VP of IT for Priority Health, a health insurance products provider, have focused on showing what IT can do for the business. Winright's team achieved an estimated 12 percent reduction in expense spending (actual dollars spent) in 2008. How did they do it? Winright shares a few tips.

CIO: You put a Project Management Office in place to improve the ability to trace costs. Then what?

Winright: Well, let's be careful. Project costs associated with large business initiatives are only one portion of IT spending. We wanted to cut costs in ways that would enhance our business alignment and increase the services we offer. To do that, we had to expose all of the costs in IT—PMO and non-PMO—in terms the business could understand. In other words: business applications. We enumerated all IT budgetary costs by application, and then bucketed them based upon whether they were existing services or new services being installed in 2008. We began to converge to fewer technologies and applications that offer the business the same functionality, while increasing service levels for each offering.

Krischa Winright

What other steps did you take?

We converted costly contracted labor associated with internal staff. We ferociously negotiated costs with our vendors. We took advantage of virtualization and other convergence technologies to maximize benefit from spending. We have proven a six percent shift of spending from existing service costs to new services. This is a powerful message to share with business partners. They will ultimately benefit when six percent more IT spending is directed to new initiatives rather than to existing services costs.

What advice do you have for other IT leaders?

It is imperative that you and your business peers understand the complete picture of IT spending in terms of business strategy. Then, and only then, will transparency into IT spending be an effective tool to increase business alignment. (Read the full interview at *www.cio.com/article/467013*).

–Matt Heusser

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hot jobs

For more **HOT JOBS** go to *www.cio.com/article/101314*.

BY **KRISTIN BURNHAM**

Project Manager

job description: A project manager (PM) serves as a critical link between IT team members and key individuals involved with a project to ensure its timely completion, says Katherine Spencer Lee, executive director at Robert Half Technology, an IT staffing provider. PMs typically oversee the process and methodology that is in place, identify best practices to ensure a successful project, manage the pipeline of requirements and act as a liaison between IT and the business. The most successful project managers can help save their company time and money by ensuring that these projects stay on track.

why you need one:

There is a "huge demand" in the market right now for people who have demonstrated an ability to execute, says David Foote, CEO and chief research officer at the IT consultancy Foote Partners. Poor project execution occurs when there is a breakdown in relationship management, communication, cooperation and poor problem resolution, he says. PMs get projects on track and ensure they are implemented properly and efficiently. This is important in today's economy; only 35 percent of IT projects are completed successfully, according to The Standish Group.

salary range

$78,000 to $150,000

desired skills:

"The number-one skill you need is organization," says Jim Lanzalotto, vice president of strategy and marketing at Yoh, a talent and outsourcing firm. Look for a bachelor's degree in an IT- or business-related field, a background in applications development and five or more years of experience managing complex projects, says Lee. Potential hires should also have strong communication, problem-solving and interpersonal skills; multitask efficiently; and have a strong ability to manage client expectations, Lanzalotto says.

how to find one:

Lanzalotto says networking is the best way to find a qualified project manager. "Ask people who have worked on similar projects if they can recommend someone," he says. Foote suggests seeking out applicants with Program Management Institute certifications.

what to look for:

Hire project managers who have managed similar-scope projects in the past, says Lanzalotto. Lee recommends looking for candidates who are highly motivated self-starters with excellent attention to detail.

elimination round:

Ask candidates how they fixed a project that fell off track. "Not all project managers have been successful," says Lanzalotto. "It's hard to find people who have a proven track record of multiple successful projects."

growing your own:

Companies that can assist in the achievement of a Project Management Professional certification can certainly help project managers grow within the organization, Lee says. "All tech professionals are exposed to project managing because they're working on projects all the time," says Lanzalotto. "Put them on a project as the second person to the PM. That way they're still doing work on the project, but they're also helping to lead it. "

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EXECUTIVE VIEWPOINT

Virtual Reality in Data Centers:

Opportunities Outnumber Transitional Challenges

David Thompson

CIO & GROUP PRESIDENT, IT AND SERVICES GROUP, SYMANTEC CORP.

Thompson leads a combined services, technical support and IT organization, which is focused on better leveraging the company's investments in IT-related services for both internal and external use. He has a solid 18-year track record as an IT leader in the technology industry.

Virtualization has quickly become a strategic imperative for data centers. Here, Thompson offers a CIO's perspective on how to tackle new management challenges that come with the increasing integration of physical and virtual machines.

Why is virtualization of the data center so critical?

As the economy continues its decline, IT organizations are going to have to meet user demands with flat budgets and existing infrastructure. In this respect, virtualization is a promising business tool—helping organizations not only consolidate physical servers and improve hardware utilization, but also enhance availability in many cases.

> "Data must be protected and maintained with high availability—regardless of whether it's on a physical server or virtual server."

How does virtualization affect storage?

Server virtualization can make storage management very difficult. Current tools haven't really been proven in virtual environments, let alone in the physical world. One challenge is the abstraction of storage by the file system, which prevents application-specific mapping to storage. But now there are a growing number of tools to decompose file system-level detail so IT can see which applications are consuming storage. With these tools, they can dynamically allocate storage resources, provision capacity where needed and perform snapshots across the entire organization.

Will it make backup administration and execution more challenging?

Data must be protected and maintained with high availability—regardless of whether it's on a physical server or virtual server. A single server may have the capacity for backups, but when multiple virtual servers are distributed across one machine, the performance of the entire environment is definitely affected. So IT organizations should consider implementing "off-host backup," which provides for a single file or an entire machine restore. The goal is absolution that's the same across physical and virtual environments.

What role does virtualization play in business continuity?

Virtualization impacts disaster recovery and business continuity because it's another layer that needs to be managed and monitored. And virtualization is a new technology, so often the native tools are immature. Going forward, high-availability disaster recovery solutions for virtual environments will have to include capabilities to monitor applications, network components, storage components, virtual machines and physical servers. They must also notify administrators and automate recovery in mixed environments, while integrating disaster recovery best practices into the overall environment.

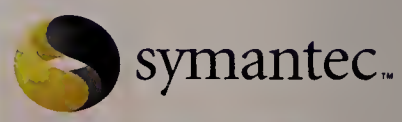
What are the key elements of a successful virtualization strategy?

IT organizations are looking at what they need beyond physical servers and the impact of virtualization on the overall infrastructure—including backup and storage. They'll need tools for both physical and virtual environments; and they'll need to leverage best practices for protection and storage management wherever they can across that heterogeneous environment.

What does Symantec bring to the virtual movement?

As companies move from physical to virtual environments, they're building a heterogeneous mix of hypervisors from Microsoft, Citrix, Oracle and others alongside VMware. Symantec understands this environment and provides backup, recovery and storage management tools that work with the same level of data protection and high availability across the entire heterogeneous infrastructure.

FOR MORE INFORMATION:
Check out the white paper, **"All IT 'Roads' Lead to Data Center Infrastructure Software"** at **www.cio.com/whitepapers/symantec**



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Benchmarking data center energy costs is getting easier, but only if you can access the right information about power consumption

The Measure of Your Power

BY KRISTIN BURNHAM

DATA CENTERS | In the spring of 2007, UPS's Ben Swanson and Joe Parrino attended a conference on the growing problem of data center power consumption. One suggested remedy was to benchmark and analyze the power flowing through the data center. So after the conference, Swanson, the facilities department manager, and Parrino, a data center facilities manager, profiled their two main data centers to learn what they could do to increase their energy efficiency and, ultimately, save money.

They found one crucial area to improve: their 65 computer-room air handlers. Parrino and his team found that some of their power distribution units had perforated tops. "We were losing all sorts of air through the tops of the cabinets," he says, which meant that some of the cool air circulated by the air handlers was being wasted by cooling the PDUs. They restricted the air flow through the cabinets, tested to make sure they wouldn't overheat, then turned 24 air handlers off.

The move has saved UPS 1.6 million kilowatt-hours and about $124,160 per year. And that's not all—they also benchmarked their mechanical cooling system and were able to reduce its energy use, saving an additional $100,000 annually. The mechanical plant of

ILLUSTRATION BY ANASTASIA VASILAKIS

these UPS data centers consumes about half what a typical data center mechanical plant consumes, according to their benchmarking study, Parrino says.

Despite the potential for savings, however, most IT departments have not rushed to benchmark data center energy efficiency, primarily because there's no incentive to measure it, says Forrester analyst Doug Washburn. He notes that only 11 percent of IT organizations are responsible for paying their energy-related operating costs (the power bill typically goes to the facilities group). But that's changing: More CIOs are being asked to reduce energy consumption, Washburn has found, and, as a result, new metrics—though they come with caveats—appear to help pinpoint which areas of your data center can be optimized.

New metrics have been created, though they come with caveats, to help pinpoint which areas of your data center can be optimized.

Two Ways to Benchmark

One such method of measuring energy efficiency, developed recently by the Uptime Institute, a data center research organization, is Corporate Average Datacenter Efficiency (CADE). This calculation multiplies the efficiency of one's technology by the efficiency of the physical facility. Uptime calculates IT efficiency by multiplying a data center's IT asset utilization rate by the energy efficiency of the servers. It determines the facility efficiency by calculating the amount of space used and multiplying that by the energy efficiency of the building. The higher the CADE number, the more efficient your data center. This method tends to be best-suited for larger businesses since those usually have the automated monitoring tools to measure server utilization, according to Uptime Institute's Executive Director Kenneth Brill.

Another method—Power Usage Effectiveness (PUE)—was developed by The Green Grid, a group of technology companies collaborating to improve energy efficiency in data centers. The PUE is calculated by dividing the total utility load (the power coming into your facility) by the total IT equipment load (the power consumed by switches, routers, servers and related gear). In this instance, the lower the PUE, the better.

Forrester's Washburn warns that while these methods can be effective, the measurements required to calculate the benchmarks can be challenging to obtain. "Because most organizations do not pay for their energy-related IT expenditures, many are not measuring energy consumption—especially on a granular level—which is required to actually calculate your data center energy efficiency metrics," he says.

Your ROI May Vary

Although the emergence of industry-accepted benchmarks means you can be more certain you're measuring the right things, Washburn also notes it's usually larger businesses that benefit from benchmarking. The bigger the data center, the more energy it consumes and the more likely it will be that you'll have an incentive to reduce consumption. "For smaller businesses, the financial impact may not be as significant, and you can direct your time elsewhere."

What's more, there isn't enough publicly available data yet for companies to benchmark against each other, so it's hard to know how efficient you can really get. If you try to compare your energy consumption with another company, peers in your industry might be a good start, says Washburn. But a more relevant comparison would be an organization with a similar-sized data center and similar server, storage and network needs.

Christian Belady, principle power and cooling architect for Microsoft Global Foundation Services and Microsoft's representative to The Green Grid, agrees that there are limits to these metrics, specifically for smaller businesses. But he thinks even small organizations can still benefit by benchmarking on a smaller scale. Belady says that once CIOs decide to benchmark their energy usage, they should consider benchmarks such as The Green Grid's PUE or any other metrics that may make sense for driving the right behavior for their business. "The industry is moving so fast that you can't wait for everyone to have the perfect definition of these metrics," he says.

One key to UPS's benchmarking success, Parrino and Swanson believe, is the support and trust from their CIO, David Barnes, to make these decisions. "You need to constantly strive to challenge yourself and be constructively dissatisfied with your own operation," Swanson says.

Whether these metrics come from vendors or industry organizations, Washburn believes that they're a good starting point for benchmarking. "At the end of the day, in most cases you'll be able to use the metrics regardless of which method you chose."

More About Energy Efficiency

Read about how **SCOTTRADE SAVES ENERGY AND MONEY** at **www.cio.com/article/472024**.

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Associate Copy Editor Kristin Burnham can be reached at *kburnham@cio.com*. To comment on this article, go *www.cio.com/article/472431*.

Can You Lock Down the Cloud?

Old wisdom still applies when meeting virtualization's security challenges

BY JARINA D'AURIA

VIRTUALIZATION | The ease and speed of deploying a virtualized environment has allowed some IT professionals to overlook security concerns that may be brewing up in the cloud.

At WorkflowOne, a provider of marketing services, the IT department realized it had to play catch-up to address new security risks. The potential for a sudden appearance of several virtual servers caused confusion and alarm among the security team, says John Dattalo, an information security analyst with the company. One feared scenario: That the team would come back from lunch to 10 new servers and not know where they came from or what they were for.

So, where should you start? The answer is more simple than you might think: exactly where you would in a conventional environment. "Having a strong [security] policy and adhering to and enforcing that policy are the first steps," Dattalo says. Making sure your processes are up to date is also important, says Natalie Lambert, an analyst with Forrester Research When virtualization first became popular, few companies included security in their assessments of whether to deploy the technology. But now IT managers are seeing the risks and taking the steps to correct the oversight, Dattalo adds.

> "I want to see and control every aspect of security in the virtual environment, just as if it were in the physical world."
>
> –John Dattalo, information security analyst, WorkflowOne

Remember the Basics

Access control stands as one of virtualization's greatest risks, says Dattalo, because someone with access to a physical server running many virtual machines "could potentially take down the entire set." Forrester's Lambert agrees: "Virtual machines have all the attributes of an entire file, and the physical server would not," she says, so employees would have access to more data than the company might want them to. In order to resolve this issue, Dattalo suggests putting a senior manager in charge of determining an access list, clearly spelling out which physical servers each employee needs to work with and which they don't.

Tracking and maintaining the virtual servers—and what's on them—is also key, says Dave Templeton, CIO with Kelley Blue Book, which provides car sales information. Templeton has added 225 virtual servers in the past 18 months. "There are the same security concerns" as with dedicated servers, he says, "but the provisioning is so much faster that you need to be more on top of things."

Currently, Templeton and his director of IT, Grant Leathers, are looking at a tool that maps every virtual machine and physical server in their data centers. With the speed virtualization offers, the need for this visibility is more important than ever. It's much harder to map what's on your virtual systems after you deploy them when you have hundreds of machines to look after, he says. Templeton suggests having an infrastructure team tightly managing the installation and support of the devices both on the rack and in the cloud, instead of trying to figure out the mapping later.

The Wait for New Tools

As of now, the tools available to manage access controls and keep visibility in a virtual environment are not mature enough, says Dattalo. He would like to have a tool that could be more granular in its separation of control, so that he and his staff could define specifically which virtual machines or applications each individual can access. Forrester's Lambert says it will be some time before more precise tools are available, but they won't come soon enough for Dattalo.

"I want to see and control every aspect of security in the virtual environment, just as if it were in the physical world," he says. CIO

Editorial Assistant Jarina D'Auria can be reached at *jdauria@cio.com*. To comment on this article, go *www.cio.com/article/472430*.

Your M&A Survival Playbook

Whether it's a shotgun merger or a planned acquisition, chances are you're not ready. Here's how to change that.

BY DAVID F. CARR

IN GOOD TIMES, MERGERS AND ACQUISITIONS ARE OFTEN driven by dreams of synergy, the idea that two successful companies can unite to capture a bigger piece of the market and be more profitable through economies of scale. In bad times, they can be driven by desperation, with one company leaping into the arms of another to avoid collapse.

Reader ROI

- Top priorities when integrating two companies' systems
- Why IT must act fast to help mergers succeed
- How to prepare before your company faces a merger

In the past few months, we've watched mergers between distressed financial institutions arranged over a weekend, with the federal government playing matchmaker to address a severe financial crisis. The rushed nature of these transactions presumably means that the companies skipped some steps in the normal merger and acquisition planning process. Ideally, the parties

ILLUSTRATION BY BRIAN STAUFFER

The most powerful information resides not in the data but in the relationship between the data.

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CIO 2 CIO > Today's IT Leaders on Market Trends

Simplifying the Data Center Infrastructure

After a decade or more of decentralized, distributed information systems, many organizations are realizing that decentralization often comes at the expense of efficiency and reliability.

AS A RESULT, THESE ORGANIZATIONS WANT TO BRING THEIR DISTRIBUTED and decentralized systems back into a central data center where they can take advantage of the latest advances in technology, such as WAN acceleration and virtualization, to boost data production and improve enterprise-wide IT performance.

Driving interest in central data centers are a number of trends, including data center consolidation, support for server and desktop virtualization, cloud computing, disaster recovery and business continuity (DR/BC), and Service Oriented Architecture (SOA). Using these strategies and others, organizations are attempting to deliver adequate application performance to the user community with the fewest possible problems and at the lowest possible cost.

Given the benefits, recentralizing and optimizing existing data centers has become a primary focus of many organizations. In a survey conducted in Q3 2008 of more than 100 IT executives on the subject of improving data center performance, IDG Research Services found that 74 percent of respondents are ready to invest in information technology to improve data center performance—especially if the investment would lead to lower operational costs or improve service delivery (66 percent).

Improving data center performance isn't as easy as it sounds, however. In fact, a number of factors can hinder organizations trying to improve data center performance, including:

- Growth
- Infrastructure complexity
- Systems and software
- Security
- Disaster Recovery/Business Continuity (DR/BC)
- Virtualization

Of these challenges, complexity is perhaps the most significant, as complexity can hinder efforts to improve data center performance and reduce costs, or both. In the IDG Research survey, 59 percent of respondents indicated that the level of complexity in their companies' data center network has increased compared to 12 months ago, suggest-

ing the challenges to simplify the data center arc mounting.

Indeed, growing complexity in the data center slows application performance and delays the deployment of the new business-enabling applications while hindering innovation. For example, to compete successfully, organizations must increase customer access to data and do so quickly, at low cost and with minimal risk to network security. This complexity, however, leads to inefficient use of infrastructure resources, higher operational costs, and increased security risks or downtime due to human error and network failures.

In many cases, organizations that are burdened by complexity are also running out of power and space. That's because many IT environments today suffer from technology sprawl—the uncontrolled proliferation of servers, systems and devices—which adds further to overall complexity. Servers, systems and devices may run different operating systems and use different management tools, making them difficult to integrate.

Technology sprawl reduces data center performance and efficiency, which raises costs—another large concern for IT organizations as they want to cut data center costs at the same time that they're improving data center performance.

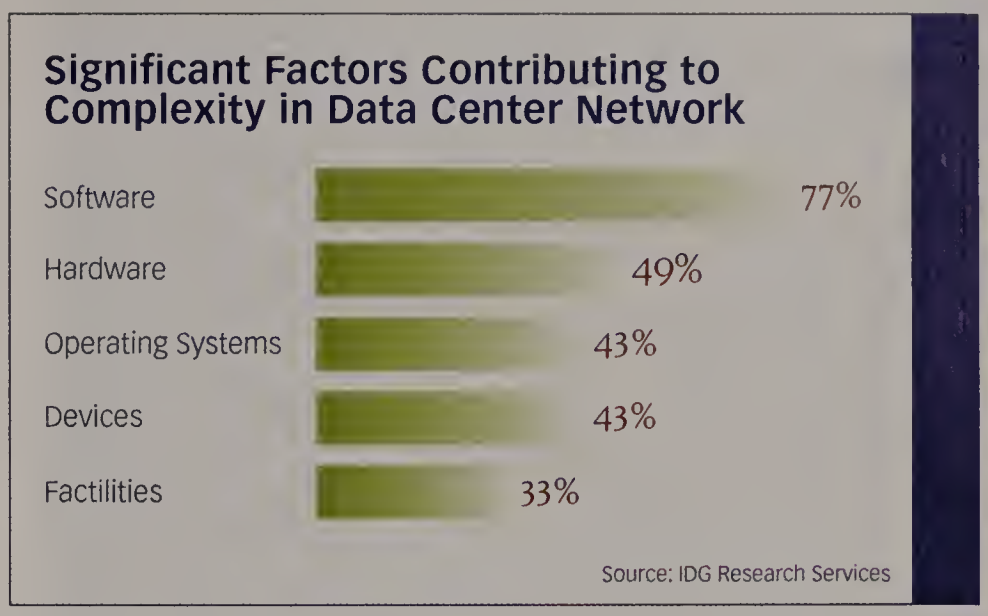
"The No. 1 concern we are hearing today from IT managers about the data center is high performance with cost avoidance," says Bobby Guhasarkar, senior manager, Juniper Networks. "Even if something improves data center performance, they also need it to reduce operational costs."

Economic drivers, according to 63 percent of IDG survey respondents, are fueling the need to cut costs and improve data center performance. In addition to motivating IT organizations to search for ways to save money, however, they're also motivating them to search for ways to make money.

The following revenue-generating factors also are motivating data center improvement initiatives:

- *Improving service delivery:* Companies want to lower latency with better and more scalable security and advanced network routing between data centers and across the WAN.
- *Increasing productivity:* Companies want to gain increased efficiency through faster and easier provisioning of applications and network resources.
- *Achieving compliance:* Companies see data centers as making it easier to meet regulatory mandates and internal corporate governance policies.

Despite the many short-term challenges they'll face in optimizing a central data center, many organizations are trying to do so to the long-term benefit of their businesses. Luckily, according to industry analysts and vendors, it is, in fact, possible to boost data center performance while lowering total cost. To do so, they recommend taking the following steps:



- Redesign the data center to streamline processes
- Collapse data center network tiers and reduce the L2 complexity
- Design networks to deliver appropriate QoS for each system, application and user community
- Consolidate data center security to ease and improve policy management
- Leverage advanced routing capability to support performance and security requirements
- Design with interoperability and integration in mind
- Consolidate network management through a single, intuitive console
- Integrate support for new systems and new types of applications in the future
- Include environmentally efficient data center practices

Of the above solutions, Guhasarkar suggests that one of the most important is consolidating the overabundance of devices within your data center. "These devices have to be traversed for every transaction, which adds latency to every application," he says.

In the end, the same globalization that fuels growth is forcing companies to improve data center performance. And the best technology vehicle for achieving that is the highly scalable, low-latency network.

Go to www.cio.com/whitepapers/juniper data center to obtain a free download of the white paper "How to Improve Data Center Performance." Based on a major research survey by IDG Research Services, this paper draws on peer insights to help CIOs implement a strategy to improve the efficiencies of their data center.

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to a merger go through due diligence to assess each others' strengths and weaknesses, which includes examining information systems and networks to assess the likely length, cost and feasibility of systems integration.

For the CIO to be intimately involved in that process is a best practice. Or so says every CIO. But in reality, that doesn't happen often enough, even in the absence of an economic meltdown. According to a 2007 study, "Wired for Winning," by Deloitte, fewer than 30 percent of companies get IT involved in the planning process before a deal is closed. The study also found that this lack of involvement has serious consequences. In one case involving a global manufacturer, IT integration costs exceeded premerger estimates by more than $100 million. CIOs feel the pain: Only half of respondents to our 2009 "State of the CIO" survey said they are involved appropriately early on in mergers and acquisitions.

So face it. The CEO and the board, in hot pursuit of a market opportunity or acting in response to competitive pressure, are likely as not to stampede past the CIO and set goals for the transaction based more on back-of-the-napkin estimates than thorough study. Even when the CIO is intimately involved, he probably won't have veto power over the deal. Instead, the CIO's role is more often to set realistic expectations for how long integration will take and what it will cost. Here, CIOs who have been through multiple mergers and acquisitions share their best advice for what to do when a deal is less than ideal from the IT perspective.

"AT LEAST IN MY EXPERIENCE, never once did a deal get stopped because of some technical issue."
–ALLAN HACKNEY, SVP AND CIO, JOHN HANCOCK FINANCIAL SERVICES

You Figure It Out

"At least in my experience, never once did a deal get stopped because of some technical issue," says Allan Hackney, SVP and CIO at John Hancock Financial Services and veteran of more than 50 M&A transactions stretching back to his days at AIG and GE Capital in the '80s. Joe Beery, the former CIO of America West and US Airways, agrees. "The CIO's role is figuring out how we will accomplish the integration."

Beery presided over systems integration for the merger of the two airlines. Although he was involved with the due diligence, he never felt he had the power to say no to the merger, he says. "It was more like, 'We're going to do this deal. Joe, go figure out how to get it done.'"

Beery is now CIO at life sciences company Invitrogen (currently merging with Applied Biosystems to form a new company, Life Technologies). He describes the experience of integrating the airlines so that they could operate as a single carrier within 24 months—a goal CEO Doug Parker had publicly committed to achieving—as "tough and grueling". The "single carrier" goal meant US Airways had to meet specific Federal Aviation Administration standards for unified operations, requiring the integration of many back-end systems. Although he pulled it off, Beery says, "I'm not sure I would wish that kind of activity on my worst enemy."

Charles Beard, who spent years consulting at the Oliver Wyman division of Marsh & McLennan and KPMG Consulting (now BearingPoint) before becoming CIO at Science Applications International Corp. (SAIC), notes Beery's experience as an example of how the structure of a deal can significantly influence the IT strategy that a CIO must follow. In the America West and US Airways transaction, the decision to immediately integrate the two carriers had a major impact on the IT environment.

If the carriers could have come together under a holding company structure operating separately, that business strategy would have dictated an entirely different—and more easily executed—IT strategy for supporting the merger. Beery could have provided some common services to two independent air carriers as an interim step. For that reason, Beard argues that even the due diligence phase is too late for the CIO to be getting involved. He or she should really be part of the discussion about the shape of a deal to help guide decisions by handicapping the odds of success. Depending on the intent of the transaction, the CIO can design the technical due diligence and contemplate the impact on the current IT environment. He can provide these findings to corporate development during transaction negotiations.

Beery says he was involved in making those strategic decisions and ultimately saw the logic of

pushing for full integration. Too often, however, the CIO's role is merely to cost out the implications of a decision that's already been made, Beard says. And even when the CIO is consulted, he says, "once the decision is made, it's our job to salute smartly and carry out orders."

The Top Priorities

The good news, sort of, is that whether or not you've been involved with due diligence, your first steps after a merger or acquisition may be similar. The systems of a large organization are too complex to be taken in by the quick peek the acquiring firm is allowed before a merger is consummated, says Graham Seel, CIO at California Mortgage and Realty. Seel spent two decades at Bank of America and worked on mergers including those with NationsBank and FleetBoston and the acquisition of Continental Illinois.

But in a shotgun merger, there's pressure to work faster and more intensely to prioritize which systems must be integrated first, as well as to structure the new IT organization, says Peter Blatman, a principal with Deloitte. So when the order to merge comes (whether from your CEO, a bankruptcy judge or the Secretary of the Treasury), it's a good idea to know where to start.

"If it were me in one of these situations, I would concentrate on a few things that are must-dos, where the faster you do them, the more likely you are to avoid problems," says Hackney, the John Hancock CIO. First on his list would be to control and integrate financial systems—not necessarily merging general ledgers but figuring out how to consolidate the numbers and integrate accounting practices. "In those systems lies the truth about what's happening with the company," he says. "The sooner you can peer into that data and really understand the situation—and the sooner you surface any surprises, any issues, any smoking guns lurking in the background—the better." Even when there's adequate time for due diligence, you learn to expect some surprises, he says.

Second on Hackney's list: network and IT security integration. "The sooner you can reconcile their security policy to yours, the sooner you can link their networks to yours, which allows you to assimilate the acquired people more quickly," Hackney says.

Unfortunately, the CIO typically doesn't find out about security weaknesses until after the deal is executed, he says. In a previous role, Hackney saw

When Your Company Is a Target

Three ways to prepare in case your company is acquired

A MERGER OR ACQUISITION TAKES TWO. And any company can be an acquisition target. Even if you don't see an acquisition coming your way today, it doesn't mean you're in the clear, says Albert Eng, former senior advisor with Cerberus Capital Management, the private equity firm that acquired an 80 percent stake in Chrysler last year. Eng conducted IT due diligence for Cerberus.

You can increase the chances that your IT department (and maybe you) will survive when another company has yours in its sights if you're prepared. Here's how Eng suggests you get ready for integrating your company into another.

1 RUN THE NUMBERS. The acquiring company is going to want to assess your IT organization, says Eng. If you're prepared, structuring the deal will make the process more efficient and support a more accurate valuation of your company. Document and refresh your IT strategy, systems architecture, projects under development, analysis of past projects and, of course, IT costs.

Eng wants to see long-term and detailed budgets in order to know how well the IT organization is performing. Most importantly, make sure you can show quantitatively how your department adds business value. "Most IT leaders falter at this part of the process because they don't have the experience to align costs with business value appropriately," he says.

2 UNDERSTAND ALL YOUR ASSETS AND INTANGIBLES. When you're joining two businesses, you're also integrating two groups of people. It's not enough to understand the capacity of your systems—you have to know the strength and weaknesses of your employees, too—and be able to communicate them to the acquirer.

3 GET RID OF BAD HABITS. When being acquired, it's an opportunity look in within your IT department for inhibitors to a cost-effective integration. Obsolete or undocumented technology, poor management of your IT budget and inflexible workers can hurt your chances at a successful merge.

–Jarina D'Auria

security weaknesses surface with the acquisition of relatively small firms in India and Southeast Asia. They had a greater tolerance for information security risk. "Security can be a real hindrance to bringing an acquired entity into the fold," he says.

Hackney would make integration of financial, security and also distribution systems his top priorities in any acquisition, but he says they would be even more urgent in a distressed one.

"MERGERS ARE ABOUT PEOPLE: I've seen that obeyed to great success and I've seen it ignored at great cost." Other key factors are how well the merger team bridges corporate cultures and pays attention to customer needs.

–GRAHAM SEEL, CIO, CALIFORNIA MORTGAGE AND REALTY

Maintain Momentum

While no one likes to be rushed, in some ways urgency is a CIO's friend. That's because the early days of a merger are when you're likely to get the most accomplished. "If you can't get majority of the work done on IT integration within the first six months, it doesn't happen," says Deloitte's Blatman.

The merger team typically builds up "a good head of steam" at the beginning of the process, Blatman says, but tends to run out if integration drags on too long. Often, a merger team that was pulled together ad hoc, on short notice, can lose momentum as people drift back to their old jobs. In many instances, hybrid solutions and workarounds that were supposed to be temporary tend to calcify and become permanent.

Blatman has seen the consequences in a series of recent consulting engagements where "companies are asking us to help them consolidate systems that are the results of acquisitions that happened years ago, but the integration was never done."

"The back office is where you tend to lose momentum," Hackney says. In the short term, systems that aren't visible to the customers can operate in parallel without any dramatic consequences. The pain comes later, when the business must meet some broad requirement like compliance with the Sarbanes-Oxley Act, which requires programming changes to be made in multiple systems that serve the same function.

"The other place it hurts you is with your next acquisition," which will need to be integrated into multiple back-end systems rather than a unified one, Hackney adds. "If the possibility exists that you're going to be doing another two or three acquisitions, that's going to become unmanageable at some point if you don't do the integration."

One obstacle to speedy integration may be the aversion IT managers have developed to "big bang" integration projects that often fail. Jan Brecht, VP of IT management and CIO for the Americas with Daimler Financial Services, was advised by consultants to take an incremental approach to spinning off Daimler Financial's operations after Daimler and Chrysler decided to split up in 2007. But with the support of his CEO, Brecht successfully squeezed it down to eight months, rather than the recommended two years.

Although this was a divestiture rather than a merger, the scope of the challenge was similar, involving a transition for all Daimler Financial's systems away from Chrysler's applications and data centers. The incremental approach would have been the safer course, Brecht says, but it came with tradeoffs. During the transition, Daimler would have had to maintain temporary interfaces between the new systems it was phasing in and the old Chrysler systems, and those interfaces would have introduced their own complexities. Brecht ultimately decided the cost of that hybrid solution outweighed the risks of the alternative.

"If you're determined to do it as fast as possible, while having enough contingency plans in place to manage the risks, then you can dare to do a big bang," Brecht says. Making it work required a tightly coordinated plan in which many tasks that are usually performed sequentially, such as development and testing, were instead performed in parallel (with incremental testing of functionality as it was delivered).

The team also went through five practice launch events before the official "go live" and drew up 14 contingency plans for potential problems they

anticipated. For example, before going live on the newly separated system, data had to be ported over from Daimler Chrysler over a Saturday night. If testing revealed problems with data accuracy, the first contingency was to retest and reextract the data up until a deadline of Sunday at noon. If that didn't work, the next backup plan was to abort and go back to using the DaimlerChrysler systems for one week, then try again.

Like Blatman, Brecht says that in a merger, he would be wary of temporary solutions that bridge between the systems of two firms rather than combining them. For example, if IT does too good a job of providing management with a unified business intelligence view that obscures the lack of integration between the underlying systems of merger partners, the funding to complete that integration may never materialize, he says.

Architect for Success

If you're trying to figure the odds that a merger is in your future, the fact that we're heading into a recession actually has a mixed impact. Particularly in combination with tight financing, a poor economy saps the confidence and ability of firms to execute these transactions, says Tayo Olatoyan, a senior research analyst with the FactSet Mergerstat service.

According to FactSet, there were 295 mergers between U.S. companies in November, down 38 percent from the peak of 653 in July. During this period, the dollar value of those deals dropped 98 percent. A similar pattern unfolded during the last recession, which started in the wake of the 9/11 terrorist attacks and stretched into November 2002. The total number of merger transactions for 2008, as of late December, looked likely to drop about 32 percent, compared to 2007.

On the other hand, when mergers are driven by desperation (or, in the case of some financial services companies, the promise of a big tax break), things can happen suddenly. Whether or not you see a merger coming, you can increase the chances that you will be successful by being prepared.

For example, you might be able to make your systems more merger-ready by embracing service-oriented architecture (SOA), a network-centric approach to defining modular information services that can be recombined to create new applications. Because it anticipates the need for integration, SOA is supposed to make it easier to connect systems from two different companies so they can function as one.

"I think a CIO today really has to be planning and designing and developing their architecture to accommodate merger and acquisition activity," says Beery. SOA is "one good option" for pursuing that goal, he says.

Beard notes that SOA would be more useful if both parties to the merger had embraced that style of integration than if only one had. That's part of the reason why, if you can, it's so important to find out early what a merger partner's systems architecture looks like and how up to date it is, he says. Beard sees potential merger help coming from other recent technological innovations, such as software as a service and cloud computing, because the merged organization can more easily tap into an externally hosted customer relationship management application or storage utility than it can integrate in-house systems.

"You can use these solutions and not have to bring them into a data center that may already be constrained," Beard says.

Deloitte's Blatman says the client who impressed him most with its acquisition prowess made technical architecture part of a broader strategy, which also involved developing several standardized "playbooks" for handling different sizes and types of acquisitions. "They asked themselves, 'If we're going to continue to grow by acquisition, what do we do with our IT infrastructure to make it acquisition friendly?'" he says. Among other things, the company's approach led to a decision to phase out proprietary software applications in favor of commercial packages. One reason: It tends to be easier to import another company's business data into a more broadly used

A CIO TODAY has to be planning and designing and developing the architecture to accommodate merger and acquisition activity.

–JOE BEERY, CIO, INVITROGEN

Get More from a Merger

SAIC CIO Charles Beard advises **HOW TO GET MORE VALUE FROM MERGERS AND ACQUISITIONS** at **www.cio.com/article/461924**.

CIO.com

commercial application than a homegrown one, Blatman says.

Put People First

Integrating technology is important, but it's not the main reason mergers succeed or fail, argues Seel of California Mortgage and Realty. "To state the obvious point that gets ignored all the time: Mergers are about people. I've seen that obeyed to great success and I've seen it ignored at great cost."

Other key factors Seel considers obvious but which "in the heat of battle we tend to forget" are how well the merger team bridges corporate cultures and pays attention to customer needs.

When Seel worked at Bank of America during its merger with Continental Illinois, he learned quickly how vehemently many at Continental Illinois opposed the deal. During a visit with the Continental Illinois team in Chicago to work on IT integration and related aspects of the merger, he identified one influential, midlevel customer service executive who was outspoken in her opposition. A key turning point in the merger process came when he, somewhat nervously, took her to lunch.

"I made her aware that she had enormous influence and that she had a choice of how to use that influence. It was about an hour-long conversation, and at the end of it we went into a meeting, and from then on she was talking about, 'Here's how we're going to make this work,'" Seel says.

Later, during Bank of America's acquisition of FleetBoston, Seel recognized that the IT staff had been given very little information about how they fit into the merged IT organization. To bring them into the fold, he asked them how they saw their role. "I asked them to tell me: What are you proud of? Tell me what you think you bring to the table. And they were still talking about that years later."

Of course, the problem with easing employees into a merged organization is that they already suspect, with good reason, that some of them will wind up losing their jobs. That can be a terrible distraction, says Steve Terry, CIO and senior vice president of customer operations with Beneficial Financial Group. "So what you want to do is find the keepers and the people who are going to be set

loose," he says. "The sooner you do that, the sooner the acquisition is going to be successful."

Unfortunately, when everyone is under pressure to do more with less, you can't offer even the survivors very many assurances that their jobs will be secure for more than a few months, Terry says. But you should try to offer whatever conditional assurances you can, he says. "You may be able to say, 'This is the team for the next six months, and if we do everything we can to be successful—and we can do it—then there should be no more layoffs.'"

URGENCY IS A CIO'S FRIEND. "If you can't get the majority of the work done on integration within the first six months, it doesn't happen."
–PETER BLATMAN, PRINCIPAL, DELOITTE

While Terry has definite opinions on how to manage mergers and acquisitions, Beneficial's strategy has been to avoid them. "We had some very significant conversations about how we pursue growth," he says. Their analysis of the cost of acquisitions led them to a strategy of organic growth through new products or geographies. "It turned out to be a good education for my peers to understand the cost of technology if we take on something different than what we have," he says.

In particular, he underlined the challenge that would come with absorbing another company's policy management system and possibly having to run it in parallel for years if they could not find a single system to model the logic behind both firms' insurance policies.

The business world would be a better place if that kind of analysis were more common, Terry says. "I believe the CEOs and CFOs who come to value IT's contribution as a deal maker or deal breaker will make much wiser investments of corporate capital." CIO

David F. Carr is a freelance writer. To comment on this article, go to *www.cio.com/article/472426*.

Enterprise architects help Scottrade get closer to the customer, according to CIO **Ian Patterson**.

The Case for Enterprise Architects

BY KIM S. NASH

The EA is key to aligning business and IT. In tough times, this hard-to-define position is more important than ever.

When technology infrastructure lines up with business projects like musicians in a marching band, you know you have a good enterprise architect on staff. But will you keep him when it's time to start handing out pink slips?

You will if you can make the case for this hard-to-define but critical IT position.

An enterprise architect, or team of them, creates a model—usually with graphical software, but paper will do—of how your company works. That includes the business processes and the related technology as well as a common vocabulary for IT and non-IT people to use to discuss operations. The goal is a little thing called alignment.

The essence of the job "is about improving communication between the people with the problems and those who would solve them," says Leon Kappelman, cochair of the Society for Information Management's enterprise architect working group. "That's vital."

Believers such as Scottrade CIO Ian Patterson use the enterprise architect (EA) position in part to bring the IT group close to the internal customer. At the $1 billion brokerage, CEO Rodger Riney recently suggested to Patterson to send some EAs to User Summits with customers—people who trade stock online—to learn directly what services they want, Patterson says. "They get firsthand knowledge of what customers are saying" to translate into IT projects, he explains.

Reader ROI

:: The role of the enterprise architect

:: Why you need one

:: How to create business support for the role

SCOTT FERGUSON

Achieving that impressive lockstep between business and IT takes time and practice, of course. The job of an enterprise architect is hard to master and sometimes hard to nail down.

Now, amid an economic downturn, a position like that—without concrete and measurable financial value or, typically, any direct reports—can be difficult to justify when the board of directors demands companywide layoffs. Yet don't let those obstacles induce you to cut the enterprise architecture job automatically when you must reduce staff, experts warn. You could dig your company a bigger hole. The EA is key to aligning business and IT, which in these recessionary times is more important than ever.

No Universal Job Description

So what does an EA do? The answer depends on who you talk to.

At some companies, the position emphasizes technology, as in the planning of companywide systems. A core objective, for example, is to ensure that all new software and hardware meet standards and work together.

However, a CIO makes better use of an enterprise architect by having him or her focus on the technical viability of product solutions while determining their economic value to the business, says Ken Zivic, a consultant at Forsythe, a technology advisory firm. This will result in an improved IT ability to make better business decisions while considering benefits, risk and the effects of new technology implementation, he says. "There are so many vendors pulling and tugging on IT organizations. EAs have to be a shield for that," he says. "A voice of reason."

Not only that, but an enterprise architect must be a voice that many kinds of people can understand, says Tim Ferrarell, CIO and senior vice president of enterprise systems at W.W. Grainger, a $6.4 billion distributor of heavy equipment.

Ideally, Ferrarell says, this person "can think at a strategic level and all the way down to the operating level and understand how to move up and down that chain of abstraction," he says. "And know how to deal with conflicts and trade-offs."

Gee, is that all? Actually, no. That person also has to gain the confidence of the senior leadership team, he says. Execs must believe that the enterprise architect comprehends how the company works, where it wants to go and how technology helps or hinders, he says. Then effective working relationships can bloom.

In 2006, Grainger went live with a companywide SAP project—20 SAP modules and 30 additional applications that would touch 425 locations. To help guard against what could go wrong in a big-bang cutover, Ferrarell took his team of about 20 enterprise architects off their regular jobs and assigned them to design and integration roles on the SAP project. The SAP implementation was such an all-encompassing program that it made sense to re-purpose the enterprise architects into key roles in the project. Their broad business and technical knowledge made them very valuable team members, says Ferrarell.

Grainger's senior business-side managers knew these architects and their business savvy firsthand, he explains. The trust was there, which helped get IT the intense cooperation needed during and after the complicated launch. Their architects played a significant role, not only in shaping the need for completion of the ERP project, but in ensuring its design would enable their business requirements. The SAP project succeeded, Ferrarell says, in part due to the institutional knowledge and business-IT translation skills the EAs brought to it.

Now that the SAP implementation is stable and perking along, Ferrarell is putting the architecture group back together. One of the first tasks for the team is to help business groups identify what new services they want to offer customers and scope out what the IT requirements would be, he says. The job of their architects is to align business strategy, operational model design and systems design to help support Grainger's multi-channel strategy, he adds.

A Rising Star

Read more about the importance of the **ENTERPRISE ARCHITECT** at **www.cio.com/article/101401**.

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Ferrarell hires enterprise architects from outside Grainger, but the best usually come from within because they have institutional knowledge, he says. Despite the bad economy, he's filling these jobs. "This is an absolutely pivotal position."

Where to Start

Other companies, though, have to be convinced of the enterprise architect's criticality.

Sony Pictures Entertainment launched an enterprise architect role modestly in 2002, focused at first on technology issues only, says David Buckholtz, vice president of planning, enterprise architecture and quality at the media company.

He had to start small: Sony Pictures Entertainment didn't even have a corporate-wide IT department until the late 1990s, Buckholtz says. The company grew from acquisitions and other deals that parent company Sony Corp. of America made in the 1980s and 1990s, such as the acquisition of Columbia TriStar movie studio (*The Karate Kid* and *Ghost Busters*) and the acquisition of Merv Griffin Enterprises (*Wheel of Fortune* and *Jeopardy*).

"We're in a creative industry and people made a lot of decisions on their own," he says. Hence, no central IT until relatively recently and no strong belief in the importance of central IT, he says.

Buckholtz was hired from General Electric to start an enterprise architecture team because Sony Pictures wanted more efficiency and savings from IT, he says. At first, he concentrated on classifying existing and future technology investments. Categories include tech-

PHOTO COURTESY OF SONY

> "We make sure we close the loop and quantify hard-dollar costs and benefits for the CFO."
> –DAVID BUCKHOLTZ, VP OF PLANNING, ENTERPRISE ARCHITECTURE AND QUALITY, SONY PICTURES

nologies in development where Sony is doing proofs of concept; technologies in pilot; current and supported; supported but older versions; those headed to retirement; and those that are obsolete and no longer supported except "under extreme duress," Buckholtz says, laughing.

He began this way to demonstrate that IT could be businesslike: investing well, conscious of risk, planning for the future. "This is how you plan enterprise architecture when you don't have business support yet. We had to build up to that."

Once the architecture group has the enterprise IT house under control, it can look for ways to work with different business technology groups to build credibility beyond bits and bytes, he says. One technique Buckholtz used was to install architects in different business groups to work on projects on business turf but using IT's budget. A free trial, in a sense.

By 2005, Buckholtz's group had started a high-profile project with the digital media team to map out how Sony Pictures would digitize content for downloading to mobile phones and other devices. He counts it as a success that the digital media group continues to use that road map today. "We identified high-value work and we were all committed to it," he says. "It was not a group off somewhere, passing down standards."

As the economy tightens, Sony Pictures must make its distribution chain as efficient as possible, he adds. Movies, after all, are a discretionary expense for consumers and if they pull back on luxuries, Sony Pictures will feel it. EAs continuously reinforce to business-side counterparts the expected returns on IT projects as the temptation to cut spending grows. "We make sure we close the loop and quantify hard-dollar costs and benefits for the CFO," Buckholtz says.

No Decrees from On High

To be successful, an enterprise architect must not only connect with senior business managers but with the rank-and-file IT staff as well.

Being perceived as imperious can sabotage enterprise architects, according to Ryan Plant, himself an enterprise architect at Interbank FX, which makes technology for trading foreign currency online.

In smaller or midsize companies, the enterprise architect is typically one of the highest-paid IT professionals, which can cause some friction among employees. And usually the EA works closely with the CIO—an influential place to be.

An enterprise architect has to guard against getting too far removed to the management echelons and losing touch—and influence—with the technologists who design and code systems, Plant says. In other words, as much as an architect must build relationships with those outside IT, he also must maintain good relations with those inside IT who can make business plans into technology realities.

To keep those connections, he advises, architects might consider hosting brown-bag lunches and inviting application coders, designers and integrators to talk about a topic of their choosing. The architect can present on it and lead a discussion afterwards.

"You're showing people that you're thinking about things within the context of what they're working on and you're thinking in terms of how they work every day," he says. "It's an education session and it's a marketing tactic."

People go back to work thinking they've learned something and can approach the architect in the future, he adds.

Tick-off programmers by handing down standards via e-mail and a rap of an invisible gavel, and standards will be circumvented, Plant says. "Without the ability to execute, architects are going to constantly struggle with justifying their existence."

A Path to CIO

YRC Worldwide has formal enterprise architects on staff. The higher up anyone climbs in CIO Michael Rapken's IT group, the greater percentage of time is expected to be spent on what he calls "account management" with business colleagues, which are largely EA skills. They include assessing and planning potential projects together with business departments, making sure technology standards are met and business conditions satisfied.

His team is rated each year on how well they build relationships with business counterparts, among other things, through an annual internal customer satisfaction survey IT hands out to the rest of the $9.6 billion transportation company. But evaluation also comes through personal feedback. "You can tell who's being a success by whether I hear compliments about them," he says.

Score one if in the enterprise architect you recognize the makings of a good CIO.

It's a reasonable hypothesis, says SIM's Kappelman. In a small or medium-sized company, in fact, the CIO often does much of what an enterprise architect usually does at a large firm.

In a big company, the enterprise architect becomes its own career path, and one that can be just as strategic as a CIO's, Kappelman says.

One often-discussed vision of the future of the CIO profession has the technology caretaker part of the job being outsourced entirely, with the strategy parts remaining. If that happens, Kappelman says, "the CIO becomes the ultimate enterprise architect." CIO

Senior Editor Kim S. Nash can be reached at *knash@cio.com*.To comment on this article, go to *www.cio.com/article/472429*.

"You Won't Last a Year"

The Adventures of an IT Leader
By Robert D. Austin, Richard L. Nolan and Shannon O'Donnell
Harvard Business Press, April 2009, $29.95

A first-time CIO must restore his CEO's confidence in IT while he learns on the job. Is this mission possible?

BY ROBERT D. AUSTIN, RICHARD L. NOLAN AND SHANNON O'DONNELL

FIRST IN A SERIES

FRIDAY, MARCH 23, 11:52 A.M....

"SPEECHLESS" WAS not a word most people could imagine applying to Jim Barton, head of the IVK Loan Operations department. But the news [CEO Carl] Williams had conveyed moments before had left Barton dumbfounded.

"We're not asking you to leave. But I had originally proposed a very different role for you than the one you've ended up in."

An unusual assignment. I can live with that [thought Barton]. "I'm willing to do whatever will help," he offered.

"Having discussed this with the board extensively, we've..." Here Williams drew in a deep breath, "Well, we've decided that you should be our new chief information officer."

This was the news that had knocked the air out of Barton. Finally, he managed to babble: "CIO? You want me to be the CIO?"

"Davies has been overwhelmed in that role. You've been one of his most out-

spoken critics."

"I know, but...I've got no background in information technology."

"And Davies has a lot. That clearly doesn't work, so we've decided to try something else."

"Carl," said Barton, "I just don't think I'm the right choice."

"Give it time," said Williams, "but not too much time. Let me know what you decide."

FRIDAY, MARCH 23, 2:41 P.M....

ALL DAY, employees had been working on a big whiteboard in the back of a storage room to create a chart showing the new management team. Jim Barton remained the biggest puzzle. When inquisitiveness overwhelmed them, people gravitated to the corridor outside Barton's office.

Barton was oblivious to their attention, lost in a think fog, oscillating between anger and excitement, as unsure as he had ever been about anything. At 1:35 p.m., he'd swiveled his chair around to the computer screen and had begun searching the Web. He had come across a PowerPoint presentation called "A Short History of the CIO Position." Some of the content was cryptic, but the gist of it was clear.

As Barton thought back through the history of IVK, he realized that this [CIO history] fit IVK reasonably well. During the dotcom craze, IVK had been a startup. When the bottom had fallen out of the tech market, it was a very good thing that IVK had never quite gotten on board the Internet express. Throughout much of the crash-and-burn period for Internet startups, IVK had managed to grow.

The part about IT being a potential source of growth for a firm excited Barton. He remembered Davies arguing that superior technical features that could be demonstrated to clients could be a factor in closing deals. That's why he'd wanted in on meetings with customers. The idea of Davies and his weird neckties sitting down with customers had obscured serious consideration of this argument.

He shut his browser and stood up. Looking toward the door, he noticed the people outside his office.

"What is it?" he asked them, as he emerged with coat on and briefcase in hand. He singled out someone who had worked for him in Loan Operations. "Jackie, what's going on?"

"We've been trying to figure out where you fit in the new management team."

He looked around, gathered his nerve and tried on a phrase that had never before passed his lips: "I'm the new CIO."

Several people in the room gasped. Barton did not wait for further reactions. He headed for the elevator, leaving stunned silence in his wake.

time to say more, but he didn't. Barton opted for brevity to fill the new silence: "Ironic, huh?"

"I laughed for about half an hour when I heard."

Barton looked closely, trying to discern whether the remark was a friendly joke or a hostile gesture. "Hey, I just want you to know—we had some disagreements."

"We sure did."

Barton continued: "I was out of line at times, and I feel bad about that."

Davies began to laugh. "What you don't realize, Jim, is that you'll be gone soon too. That company is a madhouse. Nobody could succeed running IT in that place.

He looked around, gathered his nerve, and tried on a phrase that had never before passed his lips: "I'm the new CIO."

SUNDAY, MARCH 25, 8:15 A.M....

BARTON SAT on cold pavement, legs outstretched, prepping for a long run around the park. He'd spent Saturday night watching TV and listening to music, and then he'd gone to bed early.

The relatively mindless pursuits had left him with plenty of capacity to think about his first day as CIO on Monday. The obvious first thing to do would be a meeting of his direct reports. In the afternoon, he wanted to spend some time with Gary Geisler, the keeper of information that pertained to IT budgets and expenditures.

As Barton began to jog down a path, he had a disturbing thought. Sometimes Davies jogged here. A few minutes later he found himself running almost side-by-side with Davies, who didn't seem to notice at first.

When Davies slowed down and stopped to rest and stretch, Barton did also.

"Hi, Bill," said Barton.

"Hello, Jim," responded Davies.

A pause grew uncomfortable. Barton broke it: "I guess you heard..."

"I did." Barton waited to give Davies

You won't last a year."

Barton started to answer, but Davies wasn't finished: "Don't feel bad for me," he added. "I start a new job on Monday. I even got a raise."

Without waiting for a response from Barton, Davies sprinted away, making it clear that he didn't want to be followed.

NEXT: BARTON LEARNS ABOUT I.T. VALUE—AND HOW TO SELL IT.

Excerpted from The Adventures of an IT Leader *by Robert D. Austin, Richard L. Nolan and Shannon O'Donnell, Harvard Business Press, April 2009. Austin is a professor at Copenhagen Business School and an associate professor (on leave) at Harvard Business School. Nolan is a professor at the Foster School of Business at the University of Washington, Seattle, and a professor emeritus at Harvard Business School. O'Donnell is a PhD fellow at Copenhagen Business School and a former director and dramaturg at People's Light and Theatre in Philadelphia.* CIO

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IN SEARCH OF MANAGEMENT EXCELLENCE:

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Enterprise-wide Approach Provides the Right Information at the Right Time

IN THE 1980'S, General Electric popularized a method of instituting operational excellence throughout a corporation, a process known as Six Sigma. Since then, countless companies all over the world have implemented their own operational excellence initiatives, in which companies cut waste and deliver products faster and more efficiently than the competition.

That said, operational excellence is not the competitive differentiator it once was. In fact, it's standard operating procedure today for most if not all large companies.

It takes more to be a world-class company today. The most successful companies can see around corners, making the most well-informed decisions based on data from internal and external stakeholders to drive business value. That makes them *smart*. When they're smart, companies can execute changes in business strategy faster than the competition. That makes them *agile*. Companies then implement innovative IT and new business processes to share those best practices across the entire value chain. That makes them *aligned*.

About This Program

This peer-based thought leadership represents a unique collaboration among Oracle and *CIO* and *CFO* magazines. The program analyzes quantitative research and tests it via qualitative interviews with actual CIOs and CFOs. The resulting executive insight is then disseminated via CXO's multimedia assets.

The end result is today's competitive differentiator: *management excellence.*

Organizational Alignment

ERP, HR and supply chain systems have played a big part in helping companies become more operationally efficient, a key ingredient for management excellence. According to new research by IDG Research Services, which surveyed 100 CIOs and 100 CFOs, more than 60 percent of companies have made aggressive or moderate investments in ERP and business intelligence software. Why? Eighty-four percent cited the need for better information quality and management decision making. The same percentage also cited improved timeliness, accuracy and transparency of business information.

While two-thirds of respondents said their ERP investments met or exceeded expectations, 21 percent said their investments fell short. When it comes to business intelligence, 24 percent said they fell short.

These statistics make clear that simply

gathering information and automating processes is not enough. Each of these systems provides valuable insight, but only to the part of the business that's using it. The information is virtually useless in providing enterprise-wide value because it's locked in a disconnected system.

Achieving management excellence requires, among other things, a series of integrated management processes that take an outside-in and inside-out view of the business. Why is this important? No company excels in the marketplace for long by understanding only internal dynamics, internal processes and internal performance.

Management processes are strategic, financial and operational, which means they must be aligned across all business functions. When processes are aligned, feedback loops become smoother; companies recognize fluctuations faster, assess the impact of those fluctuations faster and make changes to business plans.

Finance and IT may strive for alignment, but the lack thereof is cited as one of many obstacles to implementing technology that can help management make better decisions. Misalignment between finance and operations units often results in time-consuming management problems that result in missed deadlines, blown budgets and lost opportunities.

When data is pulled from isolated systems, "You can get multiple answers depending on the source," said a senior manager of financial systems at a $5 billion retailer. "That sends people in different directions. Then you're arguing over whose report is right and wasting time on things that shouldn't have discrepancies."

Structured Processes

How can companies align their objectives to enable business processes that drive value? The answer lies in implementing structured processes. According to the IDG research, companies that implement structured processes such as...

- understanding stakeholder requirements
- external market analysis
- strategy formulation
- financial and operational planning
- data analysis
- management reporting

...report that they have better internal information (72 percent versus 38 percent) to make more informed decisions compared to companies that use customized or ad-hoc processes. Companies with structured processes also report:

- better metrics for making financial and operational decisions
- adapting business models to support new or changing markets
- having well-designed processes for business planning and other crucial activities
- better collaboration for all business activities
- access to timely and accurate information

The bottom line: The use of structured, repeatable management processes enables companies to integrate their operational and financial management systems, which in turn enables managers to make better decisions. Respondents—both CIOs and CFOs—report higher levels of effectiveness in areas where they have the greatest structure and collaboration.

The Role of Information Technology

Enterprise Performance Management (EPM) solutions support strategic, financial and operational management processes to improve competitive advantage. EPM comprises all the processes, metrics, methodologies and systems to do so.

Oracle's EPM is such a system. It helps organizations achieve greater alignment and management excellence. The framework combines three overarching principles:

- Conduct and understand external views of the business to get a better grip on stakeholder contributions, requirements and market dynamics.
- Align strategic, financial and operational management processes across all levels and business functions.
- Create feedback loops between all management processes and stakeholders to create alignment within the organization and across the extended value chain.

Both CIOs and CFOs say that data analysis is the business management activity that would benefit most from greater use of IT. Smart companies match the right technology with the best methodologies and processes to turn the ever-expanding amount of internal and external data into actionable information used to support critical business decisions.

An EPM system collects, manages and distributes large amounts of data, providing stakeholders with the right information at the right time and in the right format. Moreover, EPM connects financial and operational decisions and activities with transactional systems to form a fuller management picture.

Conclusion

Management processes across all disciplines must be aligned because disparate information is one of the major barriers to achieving management excellence. EPM produces a common platform that identifies key management processes to effectively manage the enterprise.

It's not enough today to produce goods and services faster and less expensively than the competition. Today's market leaders use EPM solutions to integrate operational and financial views, which help assess the corporate-wide impact on business decisions.

When processes, people, metrics, systems and businesses are connected, companies can achieve management excellence and drive competitive advantage. ■

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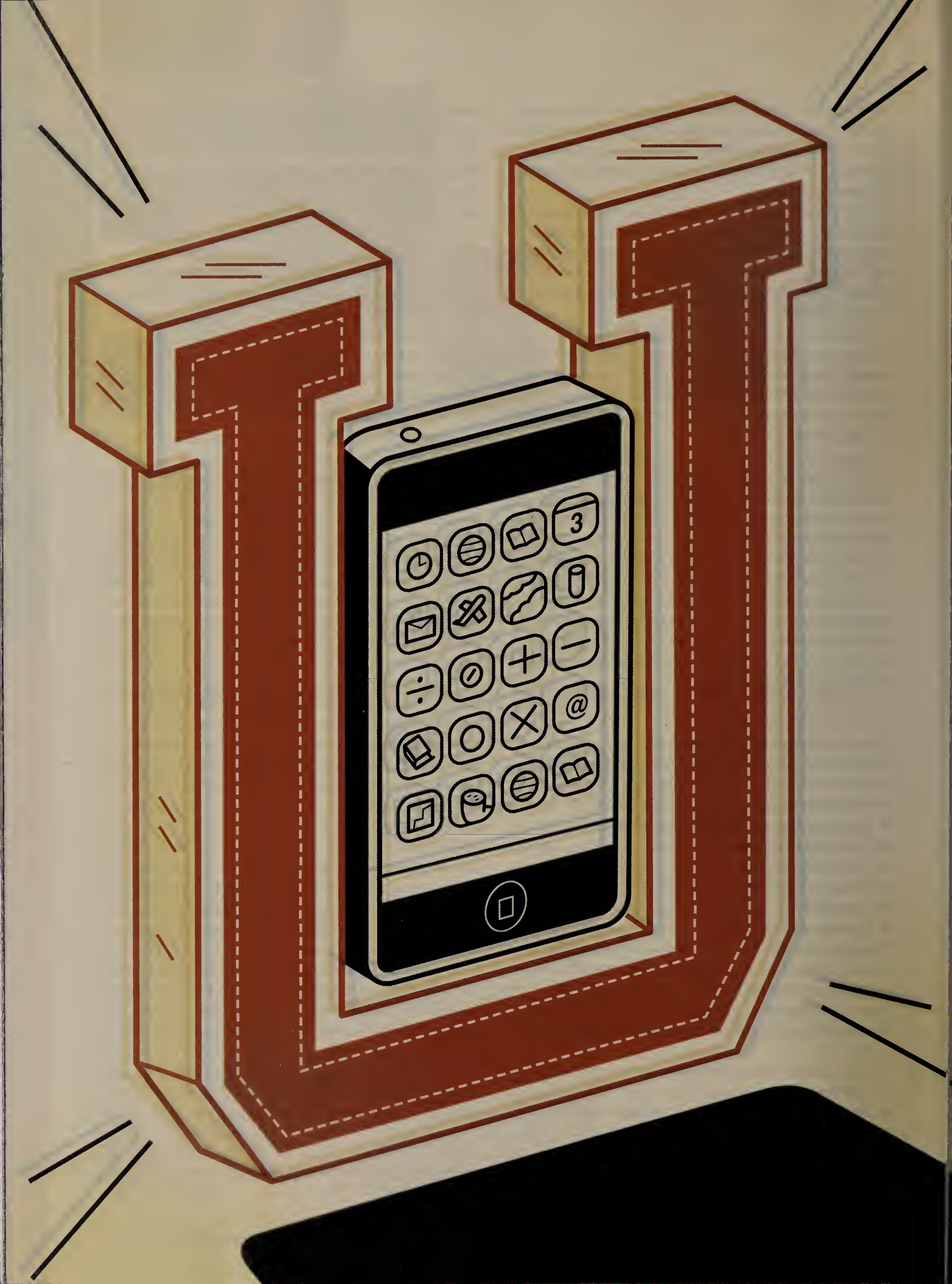


iPhone U

Mobile devices are transforming how students learn and professors teach at Abilene Christian University. College will never be the same again.

BY AL SACCO

A class of chatty college freshmen sits in a large lecture hall at a small-town-Texas university, debating the merits of president-elect Barack Obama's proposed healthcare reforms. The conversation becomes heated at times and defensive voices rise and fall. Only half the class speaks up regularly, yet they'll all be asked to participate in the final exercise: a vote on which of the arguments presented was the most convincing.

Such debates are common on college campuses, but there's one obvious difference between the Abilene Christian University (ACU) freshmen and those at most U.S. colleges: All the ACU freshman carry university-issued Apple iPhones or iPod touch devices. About half the faculty does, too. So instead of a show of hands, which could be biased because students may hesitate to go against popular opinion, votes on the debate could be collected and instantly displayed using ACU's custom iPhone website.

Welcome to "iPhone U," where ACU's faculty and students are putting Apple's mobile devices to innovative use as tools for teaching and learning inside the classroom and out. With every touch of their screens, they are helping the university achieve its strategy of transforming and enhancing the learning environment for the next century.

Each of ACU's 950 incoming freshman received an Apple iPhone or iPod touch when they hit campus in the fall. Most chose the 8GB iPhone; the remaining 300 chose 16GB iPod touches. The devices are paid for by the university, which sets the storage capacity. Students are responsible for their own cellular plans.

The star app for the gadgets? The university's in-house-developed, Web-based ACU Mobile. Students use it to check their university mail and calendars, look up course information, check student account balances, and even share files with classmates and professors. It's as robust as any software available in Apple's App Store.

Reader ROI

:: How mobile devices can change the learning environment

:: The need for speedier decision making in introducing new technologies

It would be easy to dismiss ACU's iPhone experiment as a flashy recruitment gimmick to woo prospective students away from bigger, better-known rivals. But in fact its faculty and technology staff have researched strategic opportunities presented by handheld devices in higher education for nearly a decade. For ACU, it's not just about boosting enrollment.

"I can, with all honesty, say that this was not a recruiting tactic," says ACU Associate VP of Operations. Kevin Roberts, who helped launch the initiative. "We firmly believe in the importance of helping our students live in a mobile, connected world. We are about preparing students for the future."

ILLUSTRATION BY HARRY CAMPBELL

Increasingly, that future looks like one in which feature-rich smartphones and other mobile devices continue to grow in popularity with consumers and business. In fact, the number of people with smartphones in the U.S. doubled to about 14.6 million in 2007, according to Mark Donovan, an analyst at M:Metrics.

"We know that world will be increasingly connected and mobile," says Roberts. "It only makes sense to start weaving converged media devices into our curricular, cocurricular and extracurricular activities. Our job is to prepare our students for the world they will inherit upon graduation."

How Could iPhones Change a University?

Apple had not yet released its first-generation iPhone when Roberts (then ACU's CIO), his IT team and faculty members met in early 2007 to discuss the future of technology at ACU. Rumors of a possible iPod/cell phone hybrid were rampant, and the subject came up after the meeting. Roberts was well aware of the rumors. What grabbed his attention that day was the excitement they generated among his fellow ACU staffers.

"That casual conversation drove us a little deeper," Roberts says. "As we started unpacking that a little bit and reading more about it, we started coming to the conclusion that if even half of the rumors were true, [the iPhone was] going to be a pretty compelling device."

Three professors who attended the meeting wrote a 40-page white paper with Roberts describing how a campus populated with students and faculty who all had iPhone-like devices might work. Roberts and other university members were to meet with Apple for an executive briefing just a few weeks after the white paper published. They brought the paper and showed it to Apple, which was equally excited about the possibilities for an "iPhone U."

Apple released the iPhone in June 2007, and ACU immediately placed an order for 30 devices. Roberts also issued a call for proposals to faculty members, requesting specific ideas on how they would put the devices to work in the classroom. "I'd hoped we'd get 10 or 12 [proposals]," he says. "We got close to 180 responses back. More than half of our faculty responded. We knew we were on to something."

IT then distributed a number of iPhones to faculty members who had expressed interest in using them in their classrooms to see whether the devices could meet the users' high expectations. By early October 2007, the first reviews started coming in: ACU faculty loved the iPhone.

ACU's IT team felt confident that the iPhone could become an important component of the university's future technology strategy. Roberts selected about 30 projects from the proposals. Then he and his staff started working on making them a reality. Dr. James Langford, ACU's director of Web integration and programming, began working on an iPhone-optimized mobile site and an associated application with his developers.

"We'd thought about the idea of mobility for a number of years, everything from laptops to PDAs and BlackBerrys. The tipping point on the iPhone for us was the fact that it has a fully functional Web browser," Roberts says. "That's what made us go ahead."

By February, seven months after the iPhone hit the United States, the university was so impressed with Apple's device that it committed to distributing iPhones and iPod touches to incoming freshman in 2008. Roberts declined to comment on the initiative's cost, although he did say approximately 1,000 devices were distributed at an average cost of around $300 apiece.

He says the initiative will continue with each new freshman class, so that in four years every student will have a device. And at the beginning of a student's junior year, they will be able to trade in their old device for a new one.

Enter "Nano Tools"

The iPhone application that students and faculty use, Mobile ACU, is a Web-based application with three main sections: ACU Mobile, an iPhone-optimized version of the university's website; the ACU Pocket Guide, which provides information about local events, businesses and services in and around Abilene; and My Mobile ACU, where students and faculty log in to access ACU mail, course information, account balances, learning tools and more.

My Mobile is the real heart of the application. Its home screen presents users with timely, personalized information, such as when assignments are due. Students can also find information on campus events. A "classes" section helps them retrieve course materials and assignments and check personal calendars.

Faculty have a different set of features,

"The world will be increasingly connected and mobile. It only makes sense to start weaving converged media devices into our activities." –KEVIN ROBERTS, ACU ASSOCIATE VP OF OPERATIONS

based on permissions assigned to them by IT administrators. Professors can click on the "classes" section of My Mobile to see a course roster, which can be used to track attendance. The roster function includes student images next to a color-coded square with the letters "P" for present, "T" for tardy, "E" for excused and "A" for absent. Professors need only tap the appropriate letter to take attendance. Attendance can also be viewed over time as a color-coded bar graph below each student's image.

Both student and faculty members have access to a function called "Nano Tools." Langford jokes that the name was inspired by the fact that the available tools are only one-billionth of what professors will eventually want; the real name means "No Advanced Notice." Nano Tools provide faculty and students with components for creating and participating in iPhone-based learning activities on the fly.

For instance, professors can create polls in class. They can ask multiple-choice questions, collect responses instantly via the iPhone and then display the consensus answers in word-cloud format.

Another noteworthy feature of My Mobile ACU: Students and faculty can access shared and personal drives via iPhone. Here they can store class files, as well as course-specific folders for dropping off and picking up assignments or revisions. The mobile access is currently read-only. If the user wants to upload a file they have to use a computer.

My Mobile ACU is accessible anywhere there's cellular coverage or an available Wi-Fi network. (Although the iPod touch doesn't have a cellular connection, it does have Wi-Fi support and the Safari browser.)

What does it take to develop such an iPhone application in-house? Langford and his team did all the programming work, beginning in October 2007, and finishing up last August. ACU's website is a large part of the Mobile ACU application, so site enhancements carry over to it. However, since the team was largely optimizing the university's existing portal, myACU, it had to rethink what it wanted to display for a mobile device.

The Mobile ACU application was developed initially using Joe Hewitt's iUi (*code.google.com/p/iui*) and then switched to Apple's Dashcode on the interface, Langford says. The application integrates with Google Apps, Gmail and Calendar, which are ACU's sole document, Web mail and calendar offerings. It also integrates with a document management and collaboration system from Xythos. ACU alumnus Chad Martin, a designer with WebFireCracker.com, did the Mobile ACU interface work.

Along the way, Roberts, Langford and the IT team drummed up quite a bit of publicity from bloggers and gadget websites for being among the first universities to distribute iPhones to its students and faculty. However, Roberts emphasizes that while the initiative has helped the university capture student attention, "I doubt anyone really makes their college decision based on a phone."

Lessons Learned

Roberts says that careful planning led to a smooth launch of Mobile ACU without any major surprises. The lesson? Proper preparation on both the technical and user sides is essential.

Langford credits the technology support group, whose effort in preparing and distributing the phones to students and faculty was key to the project's success. For example, the phones were distributed to users during a four-day freshman-arrival period. During that time, 24 Apple support representatives were on campus to activate the phones along with other AT&T and Apple staff to help students with any issues. IT support reps literally roamed the corridors of residence halls looking for students in need of assistance. And iPhone-specific help guides were distributed to new users along with their devices.

Cool Tools

Check out **SIX FREE iPHONE APPLICATIONS** that will improve your smartphone experience at **www.cio.com/article/462313**.

CIO.com

"You can't put too much attention to detail on the distribution of these things," Langford says.

But there were some bumps along the way.

Roberts and his team worked closely with Alcatel, ACU's wireless network infrastructure provider, to ensure campus learning areas were blanketed with Wi-Fi. When the freshman arrived last fall, the service was available in all of the university's lecture halls, laboratories and libraries. However, Robert's team had to focus on adjusting it for depth of usage as well.

ACU's Wi-Fi coverage reflected the fact that most of the university's classes tend to be small, with 20 to 30 students. But there's one freshman professor who's extremely popular; his classes average 300 or more enrollees. The network was "brought to its knees" when 300 of his students attempted to simultaneously access the course, Roberts says. So the team had to call Alcatel back to install an additional eight wireless access points to address coverage issues. There are 243 wireless access points all over ACU's campus.

Bumps aside, Roberts also learned something about the future of IT. "New technologies come on so fast, the time between introduction and saturation happens in the blink of an eye," he says. "What was scariest for me as a CIO about this process was that we had to make some decisions on launch, well before we knew whether or not the platform was going to work the way we wanted."

Proper preparation helps mitigate the risks associated with new or untested technologies, but there's always going to be a certain level of uncertainly with initiatives like ACU's iPhone program, Roberts says.

"This is going to be the world that we're going to live in," he says. "The days of being able to ponder on new tech for months and months and evaluate, those days are slipping away from us. That's exciting and scary at the same time." CIO

CIO.com Staff Writer Al Sacco can be reached at *asacco@cio.com*. To comment on this article, go to *www.cio.com/article/452714*.

Joining the Board of Directors

CIOs are increasingly eager to put their business strategy and governance knowledge to good use by serving on external boards of directors. Their reasons—personal and professional growth and benefits to their companies—are well founded, according to TK Kerstetter, president and CEO of Board Member, which publishes *Corporate Board Member* magazine.

For CIOs, "there is probably no better training than board service to understand all of the challenges that a business has to deal with and to learn about other industries," he says. "CIOs can then take this enhanced knowledge back to their current jobs and organizations."

That's how it played out for Jeff Steinhorn, CIO at $31 billion energy company Hess. Steinhorn serves on two university boards, primarily as a give-back opportunity. "Being on these boards has opened up a new personal network for me—my fellow directors are CEOs, CFOs, consulting firm partners and other business leaders," he says. These contacts have been a valuable resource that Steinhorn has tapped with his own business-related questions. His board relationship with the universities has also paid dividends in talent recruitment. "Professors know who I am and often contact me or have their top students reach out for job possibilities," he says.

CIO Michelle Beveridge, director on four boards

But board directorships are not always bonanzas for CIOs and their companies. They can be disappointing and draining experiences if you don't go in with clear and realistic expectations. CIO Executive Council members participated in a survey on their board experiences in August 2008, providing several caveats for those seeking a seat in other companies' boardrooms. (Download the results from the Connect box at *council.cio.com*.)

Gauge Your Commitment

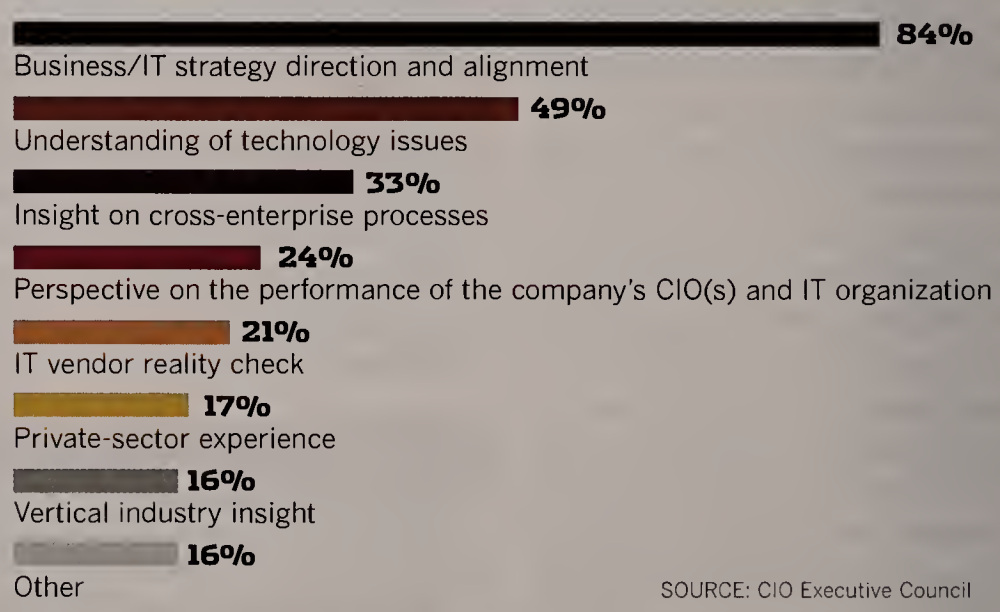
The decision to join a board, and your ultimate satisfaction with the experience, depends on two factors: your passion for the organization's mission and the time you can afford to commit.

Most CIOs aren't prepared for the time and energy their commitment will actually consume. Sixty percent of CEC survey respondents complain that board service is "too draining on their time and energy." Tim Young, vice president of IT at Bright Horizons Family Solutions, made it a priority to understand the time commitment prior to accepting his director position at a private Christian school

How Boards Use the CIO

When asked in which areas boards most often sought their contributions as directors, CIOs cited the following:

Respondents were asked to pick their top three areas.



SOURCE: CIO Executive Council

in New Hampshire. "I take it very seriously and wanted to make sure that I could give 150 percent," says Young.

On average, CIOs spend 18 hours per board per quarter, including meeting, prep and travel time, according to the survey. Monsour spends between 80 and 100 hours total per quarter on his four boards. He feels the time crunch most at fiscal year end, when he must sign documents for multiple organizations that are geographically spread out.

Strut Your Business Stuff

CIOs bring both technology knowledge and strategic business leadership to the table. Young has found that showcasing his business acumen in the public setting of a board is a great way to demonstrate that a CIO is more than just a technologist. Indeed, the chance to flex their business strategist muscles is the chief personal motivation CIOs cite for joining boards, followed closely by the opportunity to gain exposure to board-level corporate oversight processes.

CIO Butch Leonardson, on two boards

Yet, the board's perception of the CIO role may be at odds with your own view of your potential contribution. Michelle Beveridge, CIO at IDP Education and a director on four boards, has had to teach some how best to use her skills. "I constantly emphasize to other directors that I am chief information officer, not chief technology officer, and that information—whether it's accounting, financial or business strategy—is what a business runs on," she says. A quarter of survey respondents complained that the boards they serve on underutilize their contributions and involvement.

Be the Governor, Not the Manager

Another major adjustment you may have to make as a director is a shift from a practitioner mind-set to one of governance. It's one of the biggest board frustrations, according to Butch Leonardson, senior VP and CIO at credit union BECU. "I know I can do the job, but in the end it's not my job to do," he says. "I have to remember that my role as a director is one of governance, not management."

Despite the challenges, Kerstetter is confident we'll see an uptick in CIOs serving on outside boards, especially as more are named to their CEO's management team. Technology is clearly a competitive business strategy for organizations, he says, and having this expertise in the board room is a huge asset. CIO

Carrie Mathews, group manager of member services, can be reached at *cmathews@cxo.com*. To comment, go to *www.cio.com/article/472434*.

TOOLS WE USE

How to Land a **Board** Position

For those CIOs who seek to serve, there are several ways to go about snagging a board position.

» **Personal networks:** Personal networks are the most common paths to board opportunities, according to the CIO Executive Council's board survey. Butch Leonardson, senior VP and CIO at credit union BECU, serves on two boards: his alma mater Seattle University and a regional medical center. In both cases, he was approached to serve via his personal connections.

"Once you are on a board, your name is out there in annual reports and other collateral," Leonardson notes. "You become part of the 'board network,' which brings new opportunities with it."

» **Executive search firms:** IDP Education CIO Michelle Beveridge used an executive search firm to find her board appointment, a common practice in Australia where she is based. The search firm matched her with a paid director position for the Historical Queen Victoria Women's Center, a government body where she has served for nearly two years.

CIOs who have had non-IT experience, particularly P&L management, are attractive recruiter candidates for board positions, says Kerry Moynihan, managing director at executive recruiter ZRG. He notes that the bad economic times may be a great chance for CIOs to nab board positions since companies are often more focused on operational efficiency and may see a CIO's experience with process optimization as suited to that need.

» **Formal board networking events and classes:** Beveridge took advantage of formal networking events and attended a corporate governance class through the Australian Institute of Company Directors. A list of U.S.-based programs can be found at Change Leaders, a board- and CEO-training company (*change-leaders.com/board_training.html*). –C.M.

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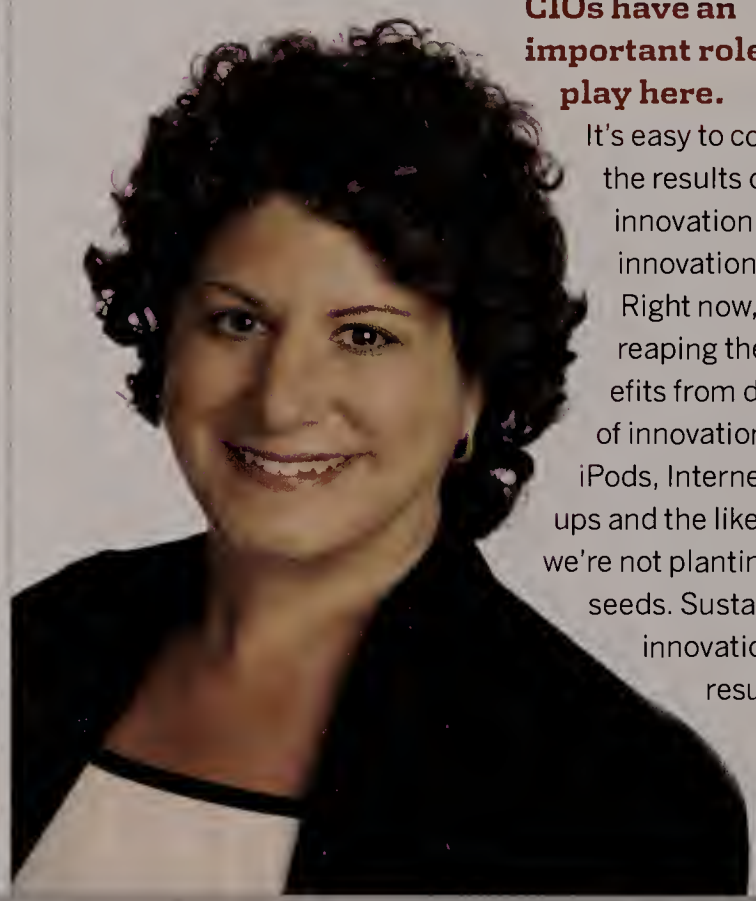
5 Things I've Learned

THE VOICE OF EXPERIENCE * AS TOLD TO JARINA D'AURIA

Entrepreneur and former Cisco CTO **Judy Estrin** talks about why CIOs and other leaders must nurture innovation to fend off global competition in her book *Closing the Innovation Gap*



Without innovation, nothing happens.
People talk about innovation but they too often take it for granted. Innovation can drive economic growth, just like cell phones, PCs and the Internet did. It also increases the quality of life, with anything from new gadgets for entertainment to new tools for medical procedures. We are at a point where we are faced with many challenges: the economic crisis, energy dependence, national security. None of those problems will get solved without innovation driving the solution.

CIOs have an important role to play here.
It's easy to confuse the results of innovation and innovation itself. Right now, we are reaping the benefits from decades of innovation. Think iPods, Internet start-ups and the like. But we're not planting new seeds. Sustainable innovation is the result of the combination of research, development and the application of science and technology. It also includes the communication between those communities. CIOs have an important role to play here. They drive innovation by making their business partners aware of what new technologies have to offer; they also support it by being responsive to their business partners' needs. CIOs also can encourage innovation by communicating needs to vendors and trying new products and services.

Accept failure.
Taking risks and learning from failure is part of the process. You shouldn't aim to fail, but you should be able to accept failure. In order to create a setting for innovation to occur, you have to be willing to question others and to share information to facilitate the exchange of ideas. The key to creating an environment that maximizes innovation is to create a balance of these points. Leaders set the tone for the entire organization, and their willingness to self-assess and acknowledge failure is critical.

The business world has become short sighted.
Business has become significantly more risk-adverse. Longer-term innovation requires investing in things that might fail. So by definition, investing in innovation is not efficient. There also has been so much emphasis on compliance that the amount of CIO mindshare and the money to invest in new things is less than it was.

Innovate through the recession.
The current economic crisis makes it all the more important for companies and their CIOs to focus on innovation. CIOs need to be innovative in figuring out how to do more with fewer resources. They also need to make sure they are still investing in the future, so when we come out of the recession, they emerge stronger. It's clearly a very challenging time for all leaders, including CIOs, to carefully balance current needs with a eye on the future.

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